the OIL AND GAS JOURNAL

JANUARY 5
1939

PRICE
30 CENTS

Hughes Tool Company Has Always Enjoyed the Closest Co-Operation of the Petroleum Industry

For 30 years Hughes Tool Company has, thru specialization, furnished the Oil and Gas Industry tools to successfully solve its ever increasing drilling problems.

In the continuous development of Hughes Rock Bits, Core Bits, Tool Joints, Valves and other specialized Oil Industry products, the close co-operation of the men "In the Field" with Hughes Tool Company's engineers and representatives has proven a great asset. It has been this co-operation which has assured Progress—and Leadership.

PERMANENTLY SHUT OFF

CO-AXIAL SPIRAL

General Walsh

The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

P. C. LAUINGER, *President* — *Editor*, C. O. WILLSON

W. T. ANDERSON, *Managing Editor* — JAMES McINTYRE, *Consulting Editor*

W. T. ZIEGENHAIN, *Engineering Editor* — L. G. E. BIGNELL, *Prod. Engineering Editor*

C. K. FRANCIS, Ph.D., *Technical Editor* — W. L. NELSON, *Metallurgical Editor*

Associate Editors

T. F. SMILEY — T. P. SANDERS

DAL DALRYMPLE — PAUL REED

District Editors

Houston, *617 Caroline St.*: NEIL WILLIAMS — F. L. SINGLETON

Fort Worth, *Petroleum Bldg.*: D. H. STORMONT

Shreveport, *City Bank Bldg.*: GEORGE WEBER

Los Angeles, *Union Oil Bldg.*: L. P. STOCKMAN

Washington, *Natl. Press Bldg.*: HENRY D. RALPH

Saginaw, *News Bldg.*: O. C. PRESSPRICH

Denver, *State Office Bldg.*: TOLBERT R. INGRAM

New York, *415 Lexington Ave.*: H. STANLEY NORMAN

Oil City, *Derrick Bldg.*: J. P. O'DONNELL

Chatham, Ontario, *Box 136*: VICTON LAURISTON

S. H. ROURKE, *Business Manager*

M. F. BALDWIN, *Circulation Manager*

Advertising

E. KLAPPENBACH, *Vice President*

New York, *415 Lexington Ave.*: C. L. CAIN

Cleveland, *Leader Bldg.*: HOWARD MARKT

Chicago, *300 W. Adams St.*: C. R. FARMER

Tulsa, *211 S. Cheyenne Ave.*: KENNETH J. LANGLEY

Houston, *617 Caroline St.*: WAYNE RIVES

Los Angeles, *1406 S. Grand Ave.*: J. HOWARD TINKHAM

Cologne, Germany—*1 Laudahnstrasse*: A. J. CHAMBERS

Table of Contents

Vol. 37, No. 34 — January 5, 1939

News Developments

Summary 9

Peak Output and Demand Predicted for Oil in 1939 ..... *C. O. Willson* 10

Geologic Aspects of Forest City Basin ..... *William G. Osborn* 12

Sparks From the News 14

News From State Capitals 15

Declining Asphalt Imports Increase Domestic Output ..... *H. Stanley Norman* 16

Editorial: Look Out! 19

Programs and Meetings 20

Antitrust Policy Outlined by Justice Department ..... *Henry D. Ralph* 21

Obituaries 22

Fairbanks Field Now Busiest on Gulf Coast ..... *Neil Williams* 23

International News 24

Refinery Progress 26

Natural Gasoline 26

Natural Gas News 27

Pipe Line Activity 27

Service on Colombian Developments 28

The Oil and Gas Journal Index for 1938 113

Engineering—Operating

Drilling Practices and Equipment Employed in the K.M.A. Field ..... *D. H. Stormont* 34

Operating Ideas 36

Types of Oil Meters Used in Operations of the Industry ..... *L. G. E. Bignell* 39

Safety—Covers Provided for Motor Terminals 42

Wildcats Encounter Hazards of Deep Drilling in Norman Area ..... *Harry F. Simons* 45

Arc Welding of Casing Requires Special Tools and Methods ..... *G. M. Stearns* 52

Problems From Readers ..... *L. G. E. Bignell* 54

Questions on Technology ..... *C. K. Francis, Ph.D.* 56

Field Operations

Field Operations Summarized 59

Illinois-Kentucky-Ohio 60

North and East Texas ..... *D. H. Stormont* 62

Gulf Coast ..... *Neil Williams* 64

Kansas ..... *Dal Dalrymple* 66

Southwest Texas ..... *F. L. Singleton* 68

West and Central Texas and Panhandle ..... *D. H. Stormont* 69

Among Drilling Contractors 70

Eastern Fields ..... *Staff Correspondent* 72

Oklahoma ..... *Dal Dalrymple* 74

California ..... *L. P. Stockman* 76

Rocky Mountain Area ..... *T. R. Ingram* 79

Michigan ..... *Otto C. Pressprich* 85

Louisiana and Arkansas ..... *George Weber* 86

Key to Abbreviations 89

Wildcats 89

Canada ..... *Victor Lauriston* 96

Markets and Prices

Crude Prices 78-104

Group 3 Market ..... *T. F. Smiley* 100

A.P.I. Refinery Report 100

New York Market ..... *H. Stanley Norman* 101

Tank-Wagon Market 102

Refinery Prices 103

Additional Features

Record of Oil Securities 97

Personal Paragraphs 98

Equipment News 105

Classified Advertising 110

Advertisers' Index 112

SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

Copyright, 1939, by The Petroleum Publishing Company

Peak Output and Demand Predicted for Oil in 1939

By C. O. WILLSON

The petroleum industry on Monday began a year which, according to present indications, will establish new records in crude oil production and consumption both within and outside the United States.

Translating the conservative views regarding probable trends in general business over the next 12 months into barrels of petroleum requirements and the conclusion is unescapable that there will be greater outlets than ever before for both foreign and domestic crude oils. A major political upheaval with economic reverberations later in the year conceivably could change this outlook somewhat although such a development would be more likely to expand than to contract demands for petroleum.

The expectation that crude oil needs will increase in 1939 is based on the assumption that there will be a recovery in general business activity in this country and many foreign areas. It is also assumed that the large liquidation of crude oil inventories will not continue in 1939. The overall gains in petroleum requirements will probably be under 4 per cent although some economists are predicting that the groundwork has been laid for a return to larger gains of 5 or more per cent.

Basis for Optimism

Part of the optimism regarding petroleum requirements this year is due to the remarkable record of the petroleum industry during the severe business recession of the past year. Estimates indicate that the total demand for all oils in this country in 1938 was practically the same as in the record year of 1937. The domestic demand decreased about 4 per cent due almost entirely to the slump in consumption of the heavy fuel oils, the residual product of the industry's refinery operations. This domestic decline was largely offset through a 13 per cent gain in exports of crude oil and refinery products. Should the final figures for December be as favorable as many believe they will be, the 1938 demand for all oils will equal within a fraction of 1 per cent the total of 1,340,801,000 bbls. reported for 1937. This means that the 1938 domestic demand for gasoline was practically the same as the 519,760,000 bbls. reported for 1937.

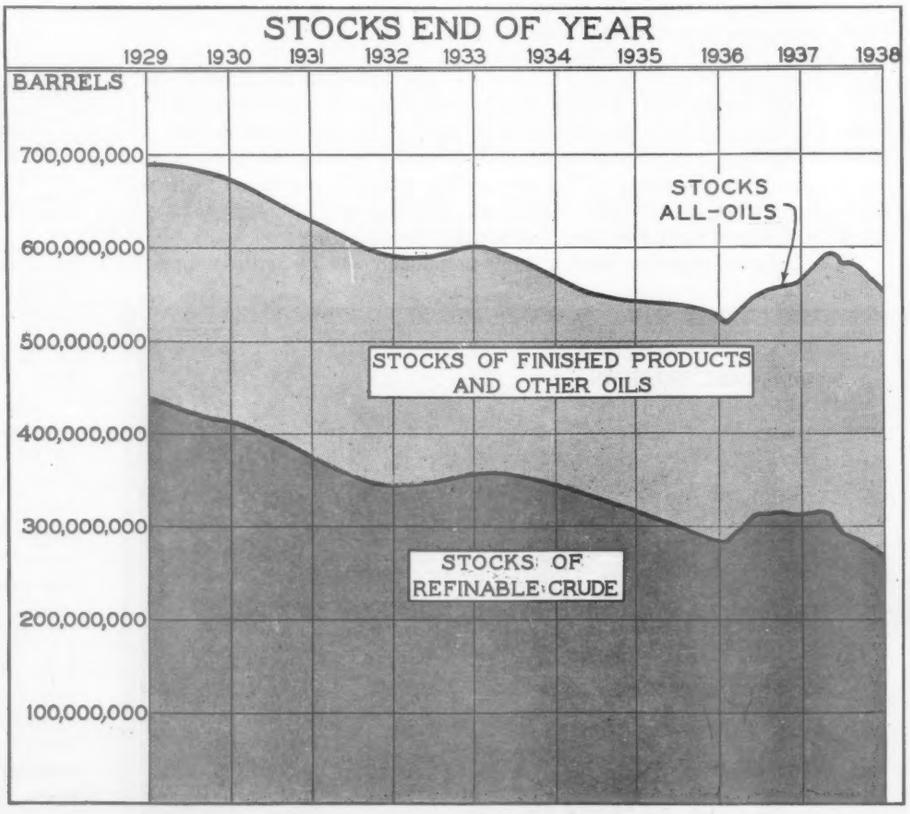
The total demand for gasoline furnished by refiners and natural gasoline manufacturers in this country for the year just brought to a close was between 1.5 and 2 per cent greater than the record year of 1937. This record was made despite a decrease of approximately 50 per cent in the 4,333,060 new car sales reported for this country in 1937 and about a 25 per cent reduction in shipments outside the United States. This in effect means that the number of new vehicles licensed in 1938 was not much greater than the normal junking of old cars. Conditions outside this country were more favorable and all data assure that a record consumption of motor fuels took place in which refiners in this country participated with peak export shipments.

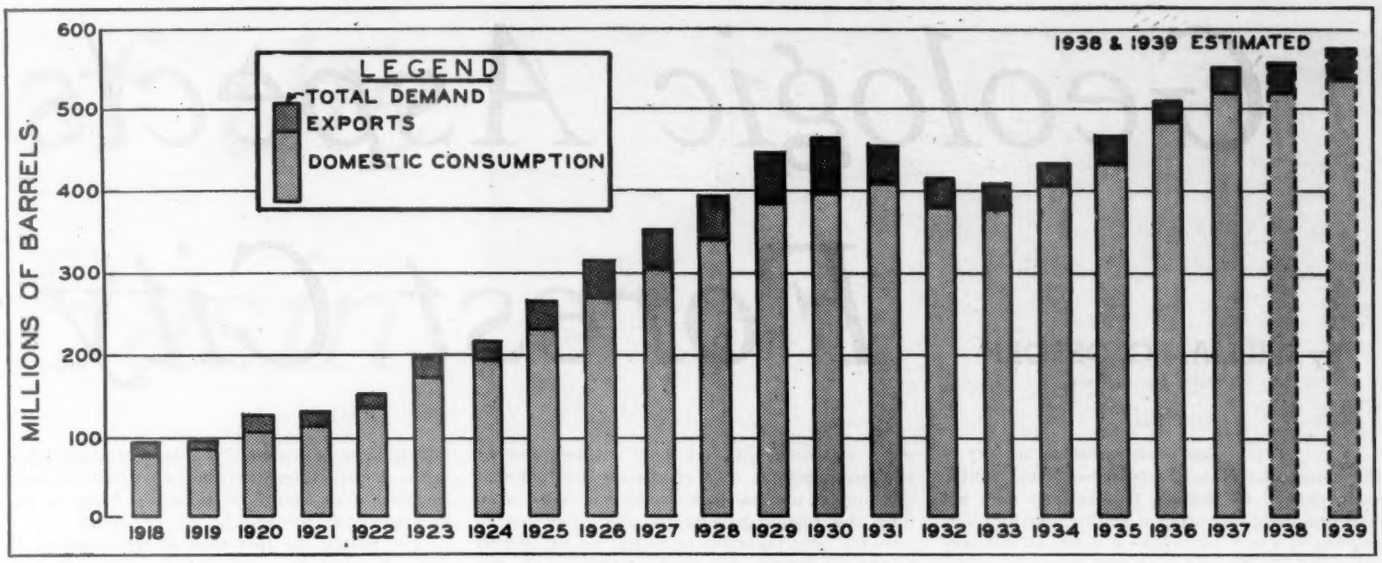
Automobiles the Key

All projections in regard to trends in 1939 largely center around what happens in the automobile industry. If the expected in new car sales materializes it will bring an increase in both domestic and foreign consumption of gasoline. Improvement in that industry is the most important single factor in assuring a recovery in general business, which will bring increased demand for the heavy fuel oils by railroads, industry, public utilities and the marine trade. The decline in requirements of these outlets accounts for the 15 per cent decrease in domestic shipments of the heavy fuel oils in 1938. The sharp slump in industrial activity last year was also largely responsible for the decrease of more than 10 per cent in domestic lubricating oil sales last year. Thus, automobile output in this country and Canada in 1939 probably will prove a good barometer to watch, not only because of its direct relationship to gasoline consumption but also because of its bearing on those factors which will determine the demand for some of the other products.

At this time the automobile industry is pointed toward a production of at least a million more units than in 1938. If this materializes it means in effect that it will recover about 60 per cent of the ground lost in 1938 compared to 1937. This would bring a substantial gain in number of cars and trucks on the highways and streets. This fact, coupled with gains in consumption per car —which always accompanies increased business activity—has been made the basis for predictions in gains of domestic consumption up to 5 per cent.

Most estimates as to the probable gains in domestic gasoline shipments next year have been around 4 per cent. The accompanying chart is based on an analysis which indicates that domestic gasoline needs in 1939 will total 532,500,000 bbls., a gain of 15,000,000 bbls. or 3 per cent over the 1938 total. With November and December estimated it is believed that export shipments of gasoline in 1938 were 48,500,000 bbls. In the chart, export shipments for 1939 are estimated the same as for 1938. The trend in export shipments of gasoline and other products from this country over the next 6 to 12 months is dependent on several factors which cannot be accurately gauged at this time. Those in touch with conditions believe that the outlook for the first quarter of 1939, based largely on commitments already made, is favorable for a continuance of the movement at least as large as the first quarter of 1938. While preferring not to make any definite predictions regarding the second and third quarters they are, as a group, optimistic regarding the foreign demand for gasoline throughout the year. It is pointed out that two large pipe line projects are scheduled for com-





Gasoline exports and domestic consumption, by years

pletion in Venezuela and Colombia the latter half of 1939 and the crude available from these two lines may reduce the requirements from producers and refiners in United States the last quarter of 1939.

The analyses that have been made covering the products classed as kerosene, distillate and gas oils generally point to a record demand in 1939. With a small increase in domestic kerosene shipments offset by a similar decline in exports, the total demand for this product in 1938 was practically the same as in 1937. This product is benefiting both from new fuel and power uses, and also the expansion of existing markets.

The same situation applies to the distillates. New installations of oil burners have decreased the past year but the new units exceed the junking of the old, and the consumption of these oils over the next 90 days, with average weather conditions, should establish an all-time peak. Consumption of these oils and gas oils as Diesel fuels, while relatively small compared to the total fuel consumption, is increasing rapidly both in this and foreign countries. It is estimated that the total domestic and export demands for kerosene in 1939 will total 65,000,000 bbls., with domestic and foreign buyers of distillate and gas oil purchasing at least 150,000,000 bbls. of those products.

The domestic demand for residual fuel in 1938 apparently did not exceed 285,000,000 bbls., a decrease of nearly 15 per cent compared to the 325,000,000-bbl. total in 1937. A substantial recovery in industry and transportation this year would bring a demand equaling that of 1937. A prediction ranging from 310,000,000 to 315,000,000 bbls. appears justified at this time. An export outlet ranging up to 20,000,000 bbls. can be added to this domestic figure.

Most manufacturers of lubricating oils are expecting a better movement of their products in domestic channels. The latest 1938 government reports showed that the total demand was off 13 per cent due to a 12 per cent decline in domestic shipments and a 16 per cent decrease in exports. Motor oil requirements parallel those of motor gasoline fairly closely. The expectation of improvement, however, is largely based on the feeling that the industrial demand will return to normal levels. The manufacturers have lost markets outside this country over the past year due to the expansion of foreign refining facilities and it is not certain that this condition will change in 1939.

The remaining principal product is natural gasoline. The manufacture of this product has leveled off and there are no new fields at this time pointing to larger production the early part of 1939. Final figures will show a production of approximately 50,000,000 bbls. in 1938 and the same output is estimated for 1939.

Stocks

The change in inventories is one of the developments of the past year which point to an increased crude oil production in 1939. Crude oil stocks were reduced approximately 35,000,000 bbls. in 1938. This means that an average of 96,000 bbls. of crude oil daily was taken out of tankage during the year instead of being produced from completed wells. With stocks of refinable crude now under 270,000,000 bbls. it seems reasonable to conclude that the inventory reduction of 1938 will not be duplicated this year. Minimum working requirements for the industry are generally estimated from 250,000,000 to 270,000,000 bbls. of refinable crude oil.

Crude Requirements

Assuming that the industry will not take as much crude oil from its above-ground accumulations as it did in 1938 and with crude imports continuing the 1938 average level of 70,000 bbls. daily, there should be an average outlet for at least 3,450,000 bbls. daily from domestic fields in 1939. This includes both domestic and export requirements. The fact that gasoline yields from crude oil are increasing and the need of keeping gasoline stocks from accumulating too rapidly over the next three months are factors in this demand for crude oil.

It is agreed that the production of these domestic fields should be kept under 3,300,000 bbls. daily until the spring demand for gasoline gets under way. However, it is apparent that if this is done there should be an outlet for domestic crude averaging around 3,550,000 bbls. daily next summer and early fall so that the average figure for 3,450,000 bbls. daily for the entire year will not be far out of line. Indicated requirements outside this country will be 2,100,000 bbls. daily.

In this connection the Standard Oil Co. of New Jersey in the current issue of The Lamp recommends an average crude runs to stills of 3,000,000 bbls. daily at domestic refineries for the first three months.

Regarding 1939 operations The Lamp said:

"Plainly, the question of whether the industry will enjoy a satisfactory year in 1939 depends on nothing so much as its willingness to weigh carefully not only the probable demand for its products but also the pressure exerted by the stocks on its shelves.

"Future consumption is something which, in an increasingly complex world situation, is becoming more and more difficult to guess. But the amount of oil in storage is known. In view of the accumulations of the past two years and the prospect of no appreciable increase in demand during 1939, the industry should watch its runs carefully If the daily average throughput for the country from January 1 does not exceed 3,000,000 bbls. (2,500,000 bbls. east of the Rockies), the industry will get by with a winter accumulation of about 7,500,000 bbls. of motor fuel stocks, leaving a backlog of 83,000,000 bbls. with which to start the main consuming season on April 1. This, assuming the producing branch continues its fine record of 1938 in reducing waste and staying within the limits of market demand, should enable the oil man to put away his aspirin and headache powders in the hope of a more generally satisfactory year."

El Segundo field, California

Geologic Aspects of Forest City

By WILLIAM G. OSBORN
Geologist, Douds, Iowa

The present leasing activity in the Forest City basin presents one of the strangest events in oil history. This activity does not have the usual character of leasing activities subsequent to a new oil strike—it is not an ordinary extension of existing producing territory—it is, literally, a sudden invasion.

Prior to the month of August there was no unusual activity in this region; the sporadic leasing and drilling common to all unoccupied regions was different here only in the presence and investigations of a couple of Mid-Continent operators of unusual perspicacity who were scanning the region geologically and preparing to lease the most favorable localities; but on August 11 the publishing of a timely article in The Oil and Gas Journal, by the writer, in which the similarities of the Illinois basin and the Forest City basin were compared, precipitated a rush of leasing in the basin which is continuing without any apparent cessation. To date of writing, without a single drilling operation anywhere, at least 3,000,000 acres have been put under lease, or are in process of "blocking."

The reason for this rush is not obscure: It rests, first, in the proration practices of other states; second, in the success of Mid-Continent prospecting practices applied to a region in Illinois which was supposed to have been already previously prospected; and third, in an article describing the similarities of the Illinois and Forest City geological basins.

This rush is now entering its second phase, locally at least, for many counties are leased solid, so far as practical purposes are concerned, and the people, including the operators themselves, are beginning to ask, What next?

The next phase of this rush is one that must be determined as to its outcome by the geological fraternity. Their task is a difficult one, for they are being forced into a drift-covered region which, for the most part, is covered by glacial drift to a depth of up to several hundred feet. It seems, from present indications, that this glacial-covered region is going to call for the creation of a special technique on the part of geologists and geophysicists alike, a technique which will be applicable to a very large drift-covered region to the north and east of the basin, and which will include northern Illinois and Indiana and other areas.

This sudden invasion of new territory, without the customary preliminaries, has taxed the resources of several state geological surveys beyond their means of assistance, and has produced a psychological situation which seems to call for the following brief observations by the writer.

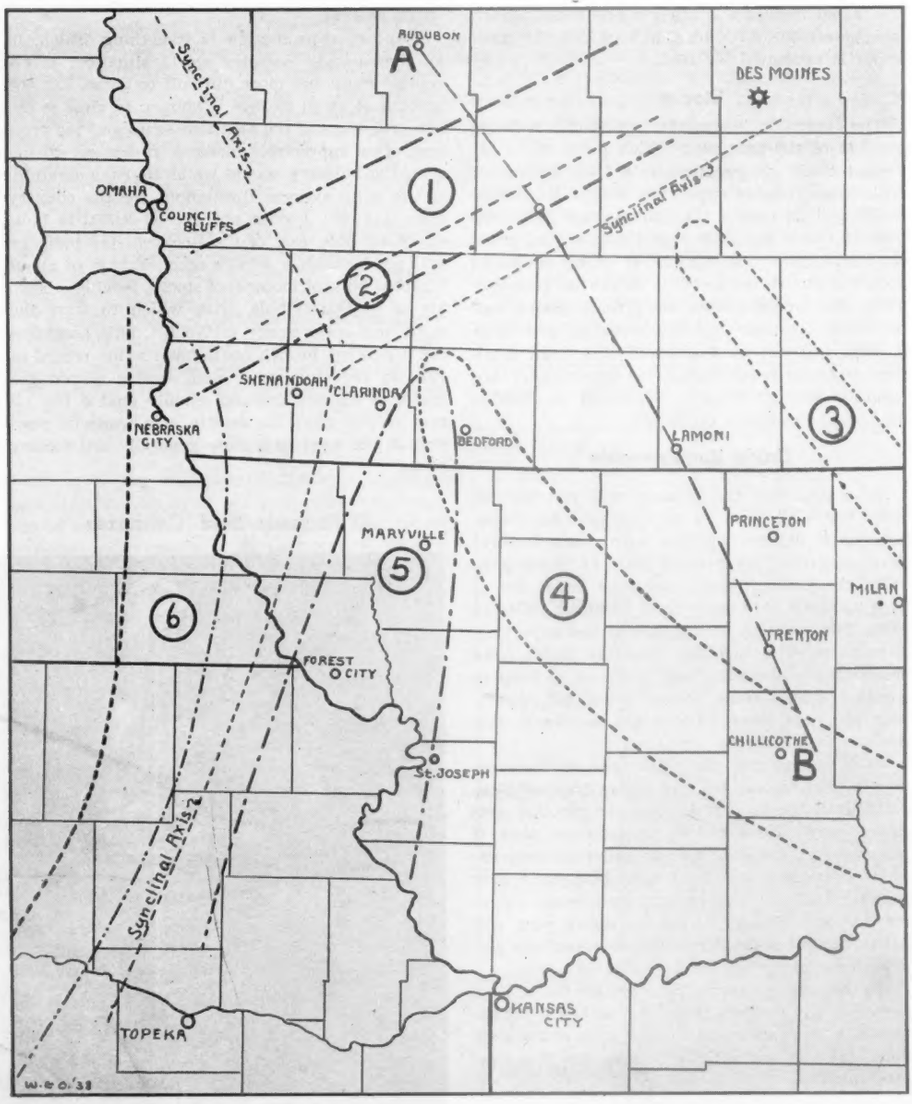


Fig. 1—Map of the Forest City basin, showing areas of differing geological complexion. For explanation see text

Local Structures

That part of the geological fraternity which has been examining this region recently must by this time have become aware that practically the whole region is featured, superficially, by a continuous succession of anticlines and domes with a north-and-south major axis; the true limits of one being but the beginning of another one. These north-and-south axes are so certainly the rule that any obscure structure which seems to depart from it may be suspected of really comprising two or more anticlines or domes, or, rarely, may be found to represent the crossing points of the north-and-south axes with one of the other lines of folding existent here or may represent the location of deep seated "highs" in the Ordovician, Cambrian or pre-Cambrian.

Many of the minor structural features in this region suggest that they represent a superficial crumpling of the softer, Pennsylvanian rock section rather than deep-seated folding. It therefore follows that the axis of some of the important pools may be found to have little surface expression and to lie between, and in the syncline of adjacent and paralleling anticlines of limited structural depth, and which latter may be really

of the Basin

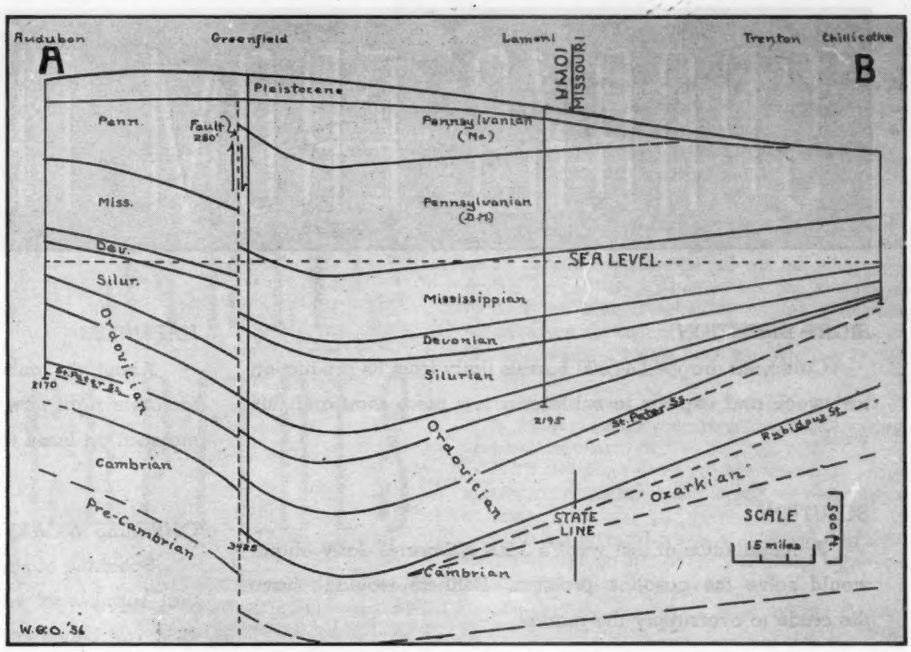


Fig. 2—Vertical section of the stratified rocks of the northeast part of Forest City basin

superficial and subordinate to a broader anticline of greater structural depth. Therefore, too much importance should not be attached to failures in this district if the surface structure is small, narrow or uncertain as to its relation to the major trends.

It will be at least improvident on the part of the independent operators of this region if they do not stop and take stock of the structural conditions here before serious prospecting is begun. It should be evident that the locating of test wells here cannot be done in the impetuous fashion that has characterized the leasing and "blocking-up" up to the present.

No test can be considered as critical here unless it is known to be based, either on well closed structures on the axes of the major trends, or on structures which are the resultants of the crossing points of major trends of differing direction; or, what are the more important, structures based on pre-Cambrian salients, or the most ancient folds. These latter are the most important for it can be considered an axiom of geological tectonics that what is once a fold is always a fold; for any lateral forces subsequent to that which first produce a fold will very certainly tend to augment its flexure. Such is the geological complex of the region that it seems the results of no test well can be considered as critical unless it is not only drilled to sufficient depths, but is also situated on an anticline based on the more ancient and original folds or on a pre-Cambrian salient.

Mr. Osborn's original article on "The Forest City Basin, a Comparison With the Illinois Basin," published in The Oil and Gas Journal of August 11, 1938, attracted wide attention and was the forerunner of the active exploratory development under way. The present article supplements the information then given with subsequent data.

Deep Drilling

As the hope of many prospectors in this region seems to be limited to the Pennsylvanian rock section, it should be stated that no test limited to that division can be considered as critical or even important. This section of rocks is from 500 to 1,800 feet in thickness here; it should be productive of gas, chiefly in the Cherokee, but the oil found therein should be expected to be of a heavy character, generally, at least to the east of the ninety-fifth meridian, and north of the north Kansas line. The finding of light-gravity oil in the lower Cherokee formations of this division might justify the supposition, structural conditions being favorable, that deeper production might be realized. The principal oil sources, not only for the whole of Iowa and Missouri, but also for western and northern Illinois, must be expected to exist below the Pennsylvanian. The total thickness of the rock section here, down to the top of the pre-Cambrian, is from 3,000 to 4,000 feet.

The Chester and Ste. Genevieve

As the Chester and Ste. Genevieve rock divisions are, at present, the chief sources of new oil production in the Illinois basin, the practical absence of these formations in the Forest City basin is causing improperly grounded doubt. This point needs no discussion, for the answer is plain in the circumstances that neither the Chester beds, nor the Ste. Genevieve exists in Oklahoma or Kansas, and the present production of Illinois is but a small fraction of the available production in those states. Further, it cannot be questioned that, stratigraphically, the Forest City basin is more closely allied to Oklahoma and Kansas than to the Illinois basin.

Synclinal Drilling

One of the doubts current in the basin, which doubtless has seemingly influenced the attitude of large interests, is to the effect that, because of inferences based on certain previous drillings in the region, it is possible that the oil here exists in the synclines. For all practical purposes this deduction is quite without rational foundation; our natural laws very certainly operate, shall we say, even in Iowa and Missouri, and the laws of oil localization or trappage can be depended to be the same here as anywhere. Oil will be found here in the synclines only under such circumstances, structural, stratigraphic, and hydrostatic, as may be expected anywhere, and those who disregard the relative values of structural "highs," and deliberately, locate their test well in a synclinal depression, or compromise by locating half way toward the anticlinal axis, without more to justify the act than the above-mentioned "hunch," have committed worse than an error. All oil development in new territory depends upon the cooperation of local landowners in leasing together to provide a "block." A test well is therefore a community affair, and such a community has a right to expect not only an earnest test, but also, an intelligent one. The "playing" of such a "hunch" as the above is simply a wrong against a community.

Salt Water

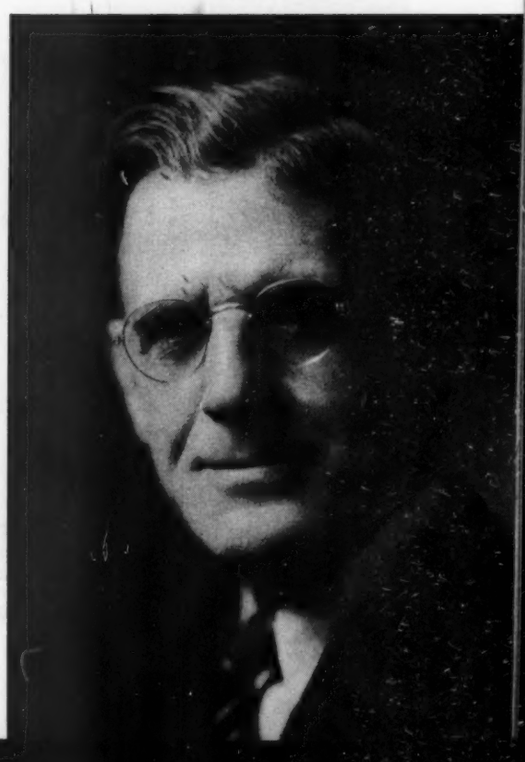
Another ghost which must be laid in the prejudice arising out of the probably general absence of salt water in the rock section of this region. In the Iowa area this absence of the connate waters is undoubtedly general, while in the Missouri areas it is at least local and perhaps general. Space will not permit a discussion of this matter, but the oil-prospecting public can rest assured that this long ancient substitution of fresh waters for the original salt water content will not in any appreciable degree affect the results of prospecting here.

General

At first thought, one of the unfortunate as-

(Continued on Page 22)

W. G. OSBORN



SPARKS FROM THE NEWS

RIGHT DIRECTION

California dropped 44,500 barrels daily from its production last week and expects to subtract a few more thousand this week.

SOLUTION

A continuance of last week's 3,200,000-barrel daily output would solve the gasoline problem. Refiners wouldn't have the crude to oversupply the market.

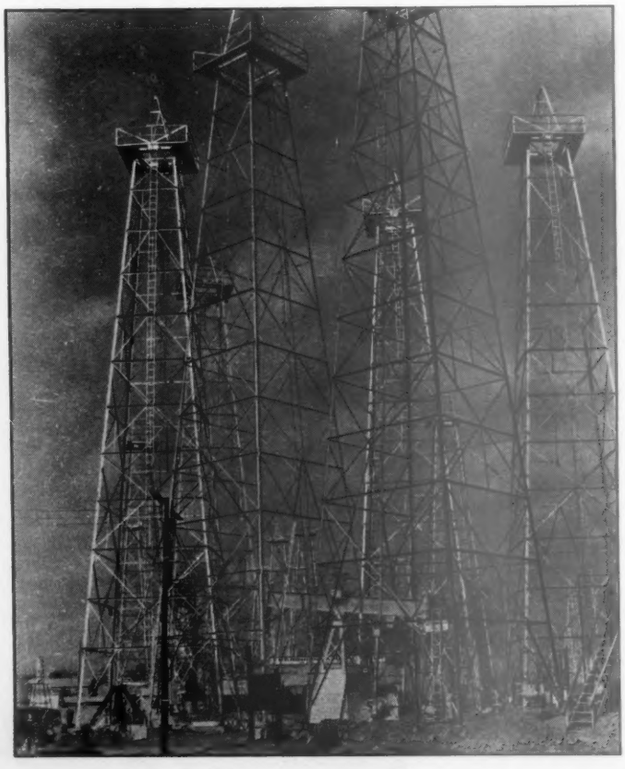
AT THE CLOSE

Kansas brought 1938 to a close with its fifty-sixth and fifty-seventh pool discoveries for the year.

MAJOR EXTENSION

The most important extension of the week was the 3½-mile addition to the Seminole pool in Gaines County, Texas.

STAGGERED



Townlot development in Kilgore, Tex.

HAPPINESS

About the only thing bothering natural gasoline manufacturers right now is the necessity of seeing that they have material on hand to fill orders already booked.

ONE LESS WORRY

Speaking of shortages, it is expedient to assure oil refiners that supplies of red ink, notwithstanding heavy inroads in 1938, are believed to be adequate.

RANKS SEVENTH

The fact that the Salem pool now ranks seventh in the United States in production is another indication of the importance of southern Illinois.

MOVE OUT

The start of a new year finds wildcatters moving into several new locations within the southwest's possible producing area.

THE OPTIMIST

A sales manager says he always remembers that the cold weather which slows up gasoline consumption also speeds up the fuel oil deliveries.

RE GUMPTION

Forecasts for 1939 show the oil industry will have the consumption, but there is still the question of whether it will have the gumption to balance its operations.

CLEARING ATMOSPHERE

Action of U. S. Supreme Court in dismissing Oklahoma's well-spacing case is another step in clearing the legal atmosphere of this important problem.

GETTING SETTLED

The 67-octane third-grade gasoline, viewed as a disturber of the peace a few weeks ago, has become pretty well settled as a member of the motor fuel family in almost a dozen states. Its widened adoption is predicted.

STATE CAPITALS

TEXAS

DRILLING PERMITS dropped sharply during the week ended December 30 due to the holiday closing the Railroad Commission. Permits granted were considerably less than in the preceding week.

Lon A. Smith, new chairman of Texas Railroad Commission

Southwest Texas led the state with 28 new permits, 12 of them in Zapata County. The Gulf Coast area tied with the East Texas field in the number of new locations, with 11 each. In East Texas six were granted in Gregg County, three in Rusk and two in Smith.

The remainder of the East Central Texas area reported three new locations. West Texas operators received six permits, while West Central Texas was permitted to drill three new wells. Panhandle operators received two new permits, while the North Texas district reported no new locations.

FIELD RULES FOR THE EMMA OIL POOL in Andrews County were announced Saturday by the Railroad Commission.

The order called for 20-acre proration units, with wells to be spaced at least 770 feet apart and 330 feet from property lines. The proration formula will be half acreage and half well potential.

A PROSPEROUS 1939 for the oil industry and allied business was the year-end prediction of E. O. Thompson, chairman of the Interstate Oil Compact Commission and the retiring chairman of the Texas Railroad Commission, who counseled, however, against the drilling of too many wells.

Colonel Thompson's statement on the outlook follows in part:

"It is my opinion that the year 1939 will be a prosperous one for the oil industry and all allied industries provided the producers of oil do not drill too many wells.

"I am hopeful that the refining end of the industry will show some real business statesmanship and keep refinery runs at or below 3,100,000 bbls. a day from January 1 through March. This should put us into the consuming season with about the proper amount of gasoline on hand."

INDEFINITE DELAY IN THE TRIAL of the suit attacking the Saturday-Sunday shutdowns appears more or less certain following the abandonment of the potential tests of the wells owned by United East and West Oil Co. The delay was requested by the company, according to Railroad Commission officials, following reports from East Texas that erratic results were being gained from the tests. Thus result of the action is to prevent completion of the 30-day tests by January 10 at which time the case was to be heard on its merits. No other operator has indicated a desire to file suit, and since the commission has decided that it will require a 30-day potential test of any well which an operator claims is marginal, the likelihood of any serious threat to the order for at least two months is only small.

THE RECENT RAILROAD COMMISSION ORDER prorating gas production in the West Panhandle field was attacked in federal District Court by two of the largest operators in the area almost before the ink was dried. Suits seeking to enjoin the order were filed by Cities Service Gas Co. and Texoma Natural Gas Co. In addition the companies asked the court to require the Railroad Commission to appear and show why it was not in contempt of any order issued by the United States Supreme Court in 1935. The companies contend that the new order issued does not differ materially from that stricken down by the courts, at least in so far as its effect is concerned. Representatives of the two companies pointed out it would be necessary to drill many additional wells in order to meet the supply curbed through proration of its present production.

COMMISSIONER SADLER lost no time in getting busy on his new job. On Tuesday he announced that agents of the commission in the East Texas field are making a first year survey of stocks on hand in every refinery in the East Texas district. He had ordered this survey when he made a visit to the district offices in Kilgore and said it was his first official act. The survey is expected to disclose the current requirements of East Texas refineries and will facilitate checking the quantity of crude delivered to the refineries during the coming months, Mr. Sadler said.

No date has been set for the next statewide proration hearing.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers, official proration agency in California, taking cognizance of the general move to reduce state production to 600,000 bbls. per day, has set the allowable for January at 600,000 bbls. daily with a 5,000-bbl. tolerance to take care of completions and other possible contingencies. This is the first change made by the committee since last August, the allowable for the past several months having been 610,000 bbls. daily, with a 5,000-bbl. tolerance. The grand jury of California producers authorized to be appointed at the general session of operators December 20 has been completed and will be known as a fact-finding committee. The group as now constituted consists of Dana Hogan, William Geis, Gene Starr, W. S. Rosecrans, and Victor H. Rossetti, the latter having been appointed this week. Ralph Lloyd, largest lessor in the Ventura Avenue field and chairman of the landowners' committee, is charged with the responsibility of contacting landowners who may not understand the purposes of the present curtailment movement, and attempt to secure their permission authorizing their respective operators to conform with the program. The revived curtailment program sponsored by three independent cooperative producers' associations has already resulted in a reduction of about 50,000 bbls. per day in production and should lead to still further restriction, as many field committees have not completed their programs.

ARKANSAS

ARKANSAS BOARD OF CONSERVATION will meet Thursday in El Dorado to listen to arguments for and against the metering of all crude oil from wells in prorated fields in Arkansas.

As a result of a petition presented by C. H. Murphy, representing land and royalty owners of Schuler at the last public hearing December 16, the board drew up the proposed metering plan which would require that all oil moved, transported or conveyed from within the controlled fields in the State of Arkansas by pipe lines shall be measured by meters, and, further that meters be installed on all pipe lines transporting or delivering oil:

1. To any other pipe line; or
2. To any refinery or reclaiming or treating or gasoline plant; or
3. To any purchaser's storage where the same is received or gathered and stored for reshipment or resale; or
4. To any point where oil is delivered to trucks for transportation and delivery to points within or outside of a field.

The petition was signed by 48 royalty owners in the Schuler field.

FIELD RULES AND METHOD of allocation of production will be discussed for the newly-discovered so-called Beene field 6 miles south of Village in Columbia County, where Tide Water Associated-Seaboard Oil Co. brought in the initial producer in Section 15-18-19.

A HEARING WILL BE GIVEN concerning application for exceptions to drilling rules in the Magnolia field by Mrs. N. L. Baker, who wishes a special permit to drill in Section 13-17-20, and the McAllister Fuel Co. which desires a special permit to drill in Section 14-17-20.

KANSAS

THE KANSAS CORPORATION COMMISSION has established the crude oil allowable for Kansas for the month of January at 153,900 bbls. daily, 9,500 bbls. a day less than for December, E. G. Dahlgren, conservation director, announced on Monday.

The commission fixed the allowable at the same figure at which the federal Bureau of Mines estimated the January demand.

Last prior allowable order fixed by the commission was October when a production of 163,400 bbls. daily was allowed. That limitation was continued throughout November and December while efforts to determine market demand for those two months became involved in the question of special allowables.

PENNSYLVANIA

THE QUAKER STATE REFINING CO., beginning January 1, 1939, began accepting 100 per cent runs from wells to which its pipe line is connected in the Bradford (Pa.) field.

The Bradford Oil Refining Co. will not alter its current crude oil runs in the Bradford field, the president, Dr. E. R. Lederer, expressing the opinion that stocks of crude oil are still too high, and prices of finished products too low, to encourage operators to produce more crude.

The Kendall Refining Co., which had been running 85 per cent of its maximum runs in the field, was preparing a statement of its plans when this was written.

Spreading tar mixture on Ohio highway

Declining Asphalt Increase Domestic

By H. STANLEY NORMAN

NEW YORK, Dec. 31.—A decline of about 10 per cent in United States imports of asphalt has served to place a greater portion of the domestic demand into the hands of this country's refiners. The fall in receipts from foreign sources, principally Mexico and Venezuela, has been accompanied by comparatively slight increases in exports and domestic demand. All factors combined in the asphalt and road oil production industries, however, have contributed to increased production by domestic refiners and this trend may have been extended slightly during the last two months of the year.

Damage and hardship inflicted by the September hurricane along the North Atlantic coastline served to increase the demand for asphalt and road oils, but close students of current affairs as regards this particular market doubt that refiners can hope to benefit until well into 1939. It is pointed out that available public funds and highway contractors' equipment were being diverted to emergency relief purposes such as repairing damaged highways and away from what new construction projects may have been contemplated before the inclement weather which is inevitable in New England in part of November and December.

Road Oil

Despite the fact that the first six or nine months of 1937 were more active so far as the building industry is concerned than the comparable period this year, domestic demand for asphalt has shown a slight increase during the latter period. In the most recent Bureau of Mines report, domestic demand for asphalt during the first 10 months of 1938 totaled 3,937,000 short tons, compared to a figure of 3,564,000 tons for the same period in 1937.

Road oil, a companion product, so far as highway maintenance and construction are concerned, has not followed the trend of increasing demand. In fact, domestic demand for road oil dropped from 7,444,000 bbls. to 7,379,000 bbls. during the first 10 months of 1937 and 1938 respectively. This decline in domestic demand for road oil is interpreted by some as the natural sequence of state gasoline tax diversion, a restriction of federal highway aid and a tendency to favor permanent public structures to receive the maximum local aid from P.W.A. and other types of government allotments.

Then too, the Federal Housing program, financing of home repairs, building of such projects as the New York World's Fair and transportation arteries to the grounds are among the types of construction leading to an increased domestic demand for asphalt. Consumption of asphalt by the manufacturers of roofing materials has undoubtedly increased this year over 1937. With thousands of homes damaged or destroyed by the September hurricane in New England and along the densely populated summer retreats on the south shore of Long Island, the demand for asphalt in the manufacture of shingles and other types of roofs may be expected reasonably to move even higher in 1939, assuming that other types of new home construction follow normal lines.

Imports of asphalt started off the year at a less vigorous pace than in 1937, probably due to general business conditions, but the most impressive contraction has been since the Mexican confiscation of oil properties. Imports of asphalt through the first 10 months of 1938 dropped to 27,600 short tons, compared to 30,700 tons for the same period in 1937, a decline of about 10 per cent.

Exports

Exports of asphalt totaled 41,400 short tons for the first 10 months against 38,100 tons for the comparable 1937 period. The 1938 figures leave a foreign trade balance favorable to domestic producers of 13,400 tons compared to a margin of 7,400 short tons in same direction last year. To meet the deficit in receipts from abroad, to care for increase in domestic demand and exports, this country's refiners produced 3,827,300 short tons during first 10 months of 1938 compared to 3,666,400 tons in same period of 1937. Stocks of asphalt at domestic refineries totaled 442,200 short tons at the end of October, a decrease of 16,100 tons from 1937. In this connection, however, it should be noted that nearly 57,000 tons of stocks were accumulated during the last five months of 1937.

In connection with the relatively poor showing in available statistics on 1938 road oil sales, it must be pointed out that these products enjoyed a gain of 6 per cent in 1937 over 1936, making 1937 one of the bright spots in this particular consumption. Increased construction of the lighter types of highway, especially for county and farm-to-market roads, resulted in an increase in road oil sales from 8,256,694 bbls. in 1936 to 8,733,650 bbls. in 1937, according to the Bureau of Mines. However, if the sales of road oil are taken in connection with sales of cut-back asphalts, paving flux and emulsified asphalts, a smaller proportionate increase (3 per cent) was registered in the total sales of liquid and semiliquid asphalts for highway construction—from 16,427,254 bbls. in 1936 to 16,968,641 bbls. in 1937.

Increases in the Rocky Mountain district, where sales of road oil were almost doubled from 1936 to 1937; in California, and in the Louisiana Gulf Coast more than offset a considerable decrease in Texas and in northern Louisiana and Arkansas, and a smaller proportional decrease in the Oklahoma-Kansas-Missouri district and in the districts east of the Mississippi River.

Of the road oil sold in the United States in 1937 only 594,812 bbls., valued at $990,951, were made from foreign petroleum imports from Venezuela and Mexico. Of the road oil made from foreign crude, 79 per cent was sold by refineries of the Atlantic seaboard in 1936 and 77 per cent in 1937; the remainder was made in Gulf Coast refineries of Louisiana and Texas.

TABLE 1—ROAD OIL SOLD BY PETROLEUM REFINERIES IN THE UNITED STATES, 1936 AND 1937, BY DISTRICTS

	1936		1937	
District—	Bbls.	Value	Bbls.	Value
East Coast	1,094,687	$1,748,326	1,041,454	$1,718,132
Appalachian	54,617	111,601	43,135	91,308
Ind.-Ill.-Ky.	1,951,755	2,565,451	1,876,768	2,753,226
Okla.-K'ns.-Mo.	771,175	954,680	707,032	835,275
Texas:				
Gulf Coast	376,661	623,274	289,861	486,350
Rest of State	25,563	33,075	2,843	3,432
Total Texas	402,224	656,349	292,704	489,782
Louisiana-Ark.:				
La. G. Coast	18,980	33,953	133,922	182,502
N. La.-Ark.	506,034	508,698	395,171	457,024
Ttl. La.-Ark.	525,014	542,651	529,093	639,526
Rky. mtn.	638,079	989,246	1,245,266	2,494,609
California	2,819,143	2,858,904	2,998,198	3,161,355
Grand total	8,256,694	$10,427,208	8,733,650	$12,183,213

With Mexican asphaltic crudes practically eliminated from trade with the Atlantic seaboard refineries, some of the stocks previously drawn from that source have been replaced with Venezuelan crude; some has been moved during recent months from California and the remainder taken from southwestern fields by way of the Gulf Coast.

Production of road oils during the first 10 months of the year is reported at 7,392,000 bbls., a slight decline from 7,554,000 bbls. for the same period in 1937. Stocks on hand totaled 680,000 bbls. as of the end of October compared to 961,000 bbls. last year. Domestic demand was 7,379,000 bbls. in the first 10 months of 1937 against 7,444,000 bbls. for the same months this year.

TABLE 2—PRODUCTION, REFINERY MOVEMENT, AND SALES OF PETROLEUM ASPHALT IN THE UNITED STATES, 1937, BY DISTRICTS

			Stocks		Consumption at refineries, transfers, losses		
District—	Production short tons	Receipts from other sources short tons	Beginning of year short tons	End of year short tons	short tons	Sales short tons	Sales value
East Coast	1,745,329	29,408	111,649	141,738	28,693	1,715,955	$19,256,072
Appalachian	102,382	.....	11,480	17,877	82	95,903	1,363,344
Ind.-Ill.-Ky.	737,934	657	87,814	152,766	14,050	659,589	7,345,214
Okla.-Kans.-Mo.	271,640	2,158	25,980	56,692	1,857	241,229	2,115,142
Texas Gulf Coast	226,607	.....	13,855	14,043	64,380	162,039	1,492,150
Texas (inland)	111,154	.....	6,990	28,146	4,007	85,991	831,336
Total Texas	337,761	.....	20,845	42,189	68,387	248,030	2,323,486
La. Gulf Coast	238,850	2,306	36,172	38,080	2,382	234,560	2,720,410
N. La.-Ark.	168,709	.....	10,810	36,281	16	145,528	1,430,524
Total La.-Ark.	407,559	2,306	46,982	74,361	2,398	380,088	4,150,934
Rocky Mtn.	133,177	253	12,744	21,973	5,289	118,912	1,201,589
California	624,142	7,123	46,705	49,850	55,873	572,247	5,238,656
Total: 1937	4,359,924	41,905	364,199	557,446	176,629	4,031,953	$42,994,437
Total: 1936	4,065,622	184,703	429,739	364,199	191,120	4,074,745	$41,144,579

Imports Output

Ewing Galloway Photos

Spreading asphalt on Fifth Avenue, New York

During all of 1937, United States refiners produced 8,087,231 bbls. of road oil which was augmented by transfer of other petroleum products, chiefly heavy fuel oil, to road oil stocks to the extent of 1,089,167 bbls. In 1936 there were transferred from fuel oil to road oil stocks a total of 1,096,583 bbls.

In Table 1 is shown the road oil sold by refineries in the United States in 1936 and 1937, by districts as compiled by A. H. Redfield, of the petroleum economics division, Bureau of Mines.

With the trends in asphalt production, imports, exports and demand fairly well defined for 1938, a review of the final figures for 1937 seems pertinent.

Asphalt demand, domestic and foreign, was 2½ per cent larger in 1937 than in 1936. To meet an increase of 87,046 short tons in domestic demand and 18,254 tons in export demand, petroleum refineries in the United States enlarged their output 294,302 tons, from 4,065,622 tons in 1936 to 4,359,924 tons in 1937, according to the Bureau of Mines. At the same time imports of lake asphalt, grahamite and petroleum asphalt apparently increased 69,785 tons in 1937 over 1936. In consequence stocks of asphalt at refineries were 193,247 tons larger on December 31, 1937, than at the end of 1936.

Domestic Tonnage

For the first seven months of 1937 the domestic tonnage apparently demanded was 15 per cent larger than in the corresponding months of 1935. After a decline in August and a rally in September, the last quarter of 1937 closed with an indicated demand 15 per cent less than in the corresponding quarter of 1936. The fact that domestic demand for asphalt during the first ten months of 1938 has increased over the most favorable part of 1937, together with prospects that the year would close without the sharp slump experienced at the end of last year, points to a healthy condition for the asphalt branch of the refining industry. Without the slump in August and the final quarter of last year the value of asphalt sales might easily have approached $45,000,000. The asphalt market has been slightly lower so far this year than during the first half of 1937, but the increased volume will level off the disparity.

Of the 1937 production of petroleum asphalt, 1,555,803 short tons were made from foreign crude oil imported chiefly from Venezuela and Mexico, compared with 1,738,255 tons in 1936. This tendency toward curtailment of asphalt production from foreign crude is obviously being extended this year.

The apparent decrease of 1 per cent in total sales of asphalt by refineries from 1936 to 1937 is probably due to a more accurate elimination from the 1937 figures of duplication arising from inter-refinery transfers and sales than to a genuine decrease in demand. The average value at the refinery of asphalt sold in 1937 was $10.66 per short ton compared with $10.10 in 1936.

Highway construction absorbs about three-fifths of all petroleum asphalt, a trend unchanged in 1937, and reported about the same this year. While most available statistics indicate a decline in the total volume of highway construction from 1936 to 1937, the decrease occurred in the lighter types of construction and in grading and draining operations; the construction of higher and intermediate types of pavement constituted a larger proportion of the whole in 1937 than in 1936.

Increased interest in soil stabilization has enlarged the market for asphalt emulsions. In addition to the sales reported by petroleum refineries included in the accompanying table, 43,464,787 gallons valued at $3,976,345 were sold in 1936 by six major industrial companies that purchased asphalt from petroleum refineries, and 49,336,367 gallons valued at $4,339,596 in 1937. Accordingly, total recorded sales of emulsified asphalts and fluxes increased in quantity from 55,961,366 gallons in 1936 to 62,683,166 gallons in 1937, and in value from $4,544,231 in 1936 to $5,094,033 in 1937.

Roofing manufacture increased in relative importance as an outlet for asphalt sales from 26 per cent of the total in 1936 to 27 per cent in 1937. Although shipments of prepared roofing and brick siding reported by the Bureau of the Census declined 7 per cent, sales of roofing asphalt and roofing flux combined increased 1.6 per cent, coincident with a gain of 8 per cent in factory shipments of dry roofing felt.

Although the total floor space of construction contracts awarded, both residential and non-residential, compiled by F. W. Dodge Corp. for 37 states, was 9 per cent larger in 1937 than in 1936, sales of waterproofing asphalt decreased considerably from 1936 to 1937, except in California. But sales of other asphalts used in general construction, in the form of mastic; and paints, enamels, japans, and lacquers increased from 52,106 tons in 1936 to 53,399 tons in 1937.

The tonnage of asphalt (natural, by-product, or petroleum) terminated by Class I railroads in the United States increased from 4,180,450 short tons in 1936 to 4,337,548 tons in 1937, according to freight-commodity statistics compiled by the Interstate Commerce Commission. Without exception the gains occurred in the area west of the Mississippi and Illinois rivers and of Lake Michigan.

Imports of natural asphalt and bitumen into the United States increased from 21,598 short tons, valued at $316,144 in 1936 to 28,663 tons valued at $395,882 in 1937, according to the Bureau of Foreign and Domestic Commerce. Imports of lake asphalt from Trinidad increased from 14,642 tons valued at $173,679 in 1936 to 24,790 tons valued at $239,697 in 1937. On the other hand, imports of grahamite from Cuba decreased from 6,692 tons valued at $118,991 in 1936 to 3,162 tons valued at $52,024 in 1937. Atlantic Coast ports received 22,970 tons of the 1937 imports, and Gulf Coast ports 5,629 tons.

TABLE 3—ASPHALT AND ASPHALTIC MATERIAL (EXCLUSIVE OF ROAD OIL) SOLD AT PETROLEUM REFINERIES IN THE UNITED STATES IN 1937, BY VARIETIES (VALUE F.O.B. REFINERY)

	From domestic petroleum		From foreign petroleum		Total	
	Short tons	Value	Short tons	Value	Short tons	Value
Solid and semisolid products of less than 200 penetration:						
Asphalt for:						
Paving	671,624	$6,582,701	490,873	$5,522,381	1,162,497	$12,105,082
Roofing	385,420	4,293,625	414,501	4,588,591	799,921	8,882,216
Waterproofing	34,642	274,184	55,055	613,437	89,697	887,621
Blending with rubber	9,172	472,445	17,541	201,990	26,713	674,435
Briquetting	62,352	632,563	1,415	22,578	63,767	655,141
Mastic and mastic cake	356	3,302	815	9,128	1,171	12,430
Pipe coatings	12,341	165,833	1,176	10,891	13,517	176,724
Moulding compounds	10,893	90,320	3,847	30,261	14,740	120,581
Miscellaneous uses	69,572	866,666	42,769	370,469	112,341	1,237,135
	1,256,372	$13,381,639	1,027,992	$11,369,726	2,284,364	$24,751,365
Semisolid and liquid products of more than 200 penetration:						
Flux for:						
Paving	84,674	$750,877	45,942	516,557	130,616	1,267,434
Roofing	262,945	2,253,115	28,336	324,859	291,281	2,577,974
Waterproofing	4,999	57,173	20,985	248,213	25,984	305,386
Cut-back asphalts:						
Rapid-curing	307,722	3,657,124	365,313	4,291,484	673,035	7,948,608
Medium-curing	400,291	4,010,661	26,172	296,568	426,463	4,307,229
Emulsified asphalts and fluxes	36,150	551,119	20,504	203,318	56,654	754,437
Paints, enamels, japans, lacquers	16,624	217,762	9,620	127,594	26,244	345,356
Other liquid products	106,677	599,095	10,635	137,553	117,312	736,648
	1,220,082	$12,096,926	527,507	$6,146,146	1,747,589	$18,243,072
Total: 1937	2,476,454	$25,478,565	1,555,499	$17,515,872	4,031,953	$42,994,437
Total: 1936	2,323,634	$22,355,127	1,751,111	$18,789,452	4,074,745	$41,144,579

Negotiations Between Union and Mid-Continent Corp. Dropped

Negotiations between the Mid-Continent Petroleum Corp. and the committee representing employes relative to a strike called by the Oil Workers Union on December 23 were terminated at noon January 3. At the conclusion of the last of a series of conferences, Dr. Edwin A. Elliott, regional N.L.R.B. director, acting as spokesman for the meeting, stated that proposals and counter-proposals had been presented and that, after consideration, Judge J. C. Denton, vice president and general counsel of the Mid-Continent company, had announced the company could not accept the proposals affecting seniority and deductions from wages; furthermore, the company did not feel that anything was to be gained in carrying on further negotiations. The committee proposed to submit the fundamental issues and the matter of settlement to the state Board of Arbitration and Conciliation. Appreciation was expressed for the part taken in the negotiations by the representatives of Gov. E. W. Marland. Doctor Elliott will remain in Tulsa in the hope that negotiations may be renewed.

Proposals made by the employes' committee related to settlement of grievances; deductions from pay for union dues, not to exceed 3 per cent; a scale of wages not lower than that of other integrated companies in the area; physical examination for employment and reinstatement; vacations for hourly and monthly employes; recognition of seniority in promotions, demotions, layoffs, and reemployment; determination of fitness for promotion; reinstatement of all striking employes without alteration of seniority.

Two counter proposals were made by Judge Denton who said in the final statement for the company:

"The management is unable and unwilling to accept the proposals which have been submitted by the committee as a condition to the settlement of the pending strike; but being desirous of settling said strike, submits the following counter-proposal:

"1. It proposes and is willing to amend the existing contract with the committee with respect to vacations.

"2. It is our information that there are only approximately 600 striking employes of the companies in the refinery, production, pipe line and gasoline departments, whereas the companies have a total number of employes in excess of 3,800, and the right to work of these 3,200 loyal employes who have not struck must be protected, as well as the legal rights of the companies. According, we propose and are willing to reinstate and to reemploy all striking employes, whether members of a union or not, except those employes who have committed a criminal offense under the constitution and laws of the state, or have engaged in a sitdown strike or have unlawfully and wrongfully seized and held possession of company property or committed damage thereto, or who have by threats, intimidation, force or violence, interfered with the operations of the companies or with loyal employes in the performance of their duties as such employes or in going to and from their homes and their places of work, or have otherwise violated the laws of the state or the rules and regulations of the companies; such reinstatement and reemployment to be without discrimination or alteration in their seniority rights, and regardless of whether they are or are not affiliated with any union.

"Any and all of these employes who have participated in any of the above unlawful or wrongful acts are hereby discharged, for cause, and notice of such action by the companies will be mailed out to each such individual employe immediately or as soon as this can conveniently be done."

An offer was made to review the grievance of six men mentioned by the committee.

The company states that the refinery is running normally and that shipments are moving freely by pipe line, railroad, and trucks. The strike was called by the Oil Workers Union, an affiliate of the C.I.O., affecting members employed in refining, pipe line, and production departments. National Guard troops ordered to the refinery area on the second day of the strike continue on duty there.

Humble Company Confirms Purchase of Properties

HOUSTON, Tex.—Humble Oil & Refining Co. confirmed its purchase of the J. M. West holdings which includes approximately 30,000 acres in southern Harris County. While details of the trade were not made public, it was reported the trade involved a cash consideration of $8,500,000 and that the West interests retained a royalty interest in all of the property. The deal included all acreage held by the West family, West Securities Corp. and West Production Co., which included the West family ranch in Harris County on which the Clear Lake field is located, all of the West property in the Friendswood field and all other acreage in the southern part of the county.

A.G.A. Technical Session Conferences Scheduled

The dates and places of two technical section conferences of the American Gas Association follow:

Distribution conference—Palmer House, Chicago, Ill., April 17-18-19, 1939. Chairman: C. F. Turner, East Ohio Gas Co., Cleveland, Ohio.

Joint committee conference of the production and chemical committees—Rochester, N. Y., May 15-16-17, 1939. Chemical committee chairman: E. M. Bliss, Public Service Electric & Gas Co., Harrison, N. J. Gas production committee chairman: F. B. Parke, Brooklyn Union Gas Co., Brooklyn, N. Y.

California Gasoline Sales Declined in November

SACRAMENTO, Calif.—A slight loss in the consumption of gasoline in November was reported by the State Board of Equalization. On the basis of distribution of 137,378,641 gallons the motor vehicle fuel tax for the month amounted to $4,118,812.05 or 2.12 per cent below the $4,208,436.21 for the same month the previous year. The November gasoline tax also was well below that for the previous month when $4,540,166.10 was collected. November was the sixth month of the year in which gasoline sales were below those of the same months of 1937.

California Tidelands Bill Coming Up in Congress

WASHINGTON, D. C.—The Nye resolution, seeking to assert Government ownership of the valuable oil deposits underlying California's coastal waters, apparently is assured a revival in the new congress.

Representative Hobbs (D.), Alabama, who fought unsuccessfully to obtain its adoption by the last house, predicted the proposal again will be submitted to the national legislature by Senator Nye (R). North Dakota, and said it will have his support.

As originally introduced by Senator Nye and adopted by the senate, the resolution would have federal title to the petroleum deposits underlying the 3-mile zone along all coasts. The house judiciary committee, however, amended it to apply only to California. Hobbs said he does not care to what coasts the proposal is made to apply.

Colonel Barton Wants Tax Load On Oil Industry Lightened

The oil industry can help materially to increase employment and raise the buying power of the nation, if Government will lighten the tax load which is now retarding an expansion of its activities, Col. T. H. Barton, president of Lion Oil Refining Co., declared in discussing the outlook for the new year. With business again on the upward trend and labor, industry and Government showing a greater disposition to work together for the common good, he felt that the oil industry was in a good position to keep pace with continued general business improvement.

"It is to be hoped that this year will see action taken at Washington to relieve the burdensome taxation which hampers the expansion of industry. The increasing tax demands by national, state and local governments continue to take money from the oil companies which, invested in the construction of new plants and facilities, would help to relieve unemployment and raise the buying power of the nation."

Oklahoma Well-Spacing Law Upheld by Court

WASHINGTON, D. C., Jan. 3.—The Supreme Court today upheld the Oklahoma well-spacing law in a brief per curiam decision in the case of Russell B. Patterson v. Stanolind Oil & Gas Co.

E. G. Seubert Stresses Need For Conservation

Edward G. Seubert, president of Standard Oil Co. of Indiana, commenting on the outlook for the new year, said:

"Every year brings new problems for the oil industry. Although 1938 production has run somewhat behind the preceding year's, a new complication has arisen out of the increase in production in states where control is lacking or lax.

"Throughout the oil states geologists and drillers have found more oil—perhaps more than is needed just now. The march of technology is continuing to make scrap iron out of old refinery equipment and to assure for consumers cheap turning of the wheels of industry and transportation.

"For the first time in several years the oil industry has suffered from a decline in consumption of its products. Turmoil has resulted in marketing, because petroleum marketers are accustomed to a larger demand every year and do not know how to adjust their operations to lower sales volume.

"There is no telling what 1939 holds for the petroleum industry. Some statistics, such as increasing rate of consumption of gasoline per vehicle, point to a possible increase in demand. Further improvement in business would mean better demand for industrial fuels and lubricants. But something more than increased consumption is needed for stability. States where production is unrestricted will have to practice conservation and control."

THE MARKETS*

CRUDE OIL: *Bell Oil & Gas Co. reduced its price in the Burkburnett and Red River Bed pools 12 cents, January 3, making the new price 67 cents for 28 to 28.9 gravity, with a spread of 2 cents for each degree upward to 40, which is 91 cents. The company explained the adjustment was necessitated by large refinery losses. The Illinois field continues to be a source of anxiety, with increasing volumes of crude finding outlets at less than posted prices.*

REFINERY: *Year-end dullness prevailed throughout all divisions of the market. The higher-octane gasolines were fairly steady, though demand was experiencing its seasonal tapering off. Heating oils were gaining strength in the East and were acquiring a steadier tone in the interior areas, though mild weather was still making overheavy inventories a cause of concern. Natural gasoline maintained its firmness, and wax was strong. Indications of a slightly better position for the lubricant group were visible.*

TANK-WAGON AND POSTED DEALER: *Only minor changes to effect local adjustments.*

FINANCIAL: *The oil issues had a good week, along with the general share market, ending the week near their highs. Average of 30 representative stocks for week ending December 31: High, 29.66; low, 27.91; close, 29.52. Week ending December 24: High, 28.93, low, 27.81; close, 28.50.*

**Detailed information in market section.*

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Look Out!

At the start of the New Year the oil industry has been taking stock of its operations during the year just closed and, what is more important, endeavoring to chart its course for the year just under way.

So far as the oil industry is concerned it appears at this time that it can look forward to the largest demand in its history, not only in this country but abroad.

Automobile manufacturers are confident they will be able to make a substantial recovery from the sharp setback of the past year. While their output may not be as great as some years back, all indications now point to a production which will mean that a larger average number of motor vehicles will be in operation in this and foreign countries than last year.

Careful analyses point to a gain of 3 to 4 per cent in gasoline consumption for this country and Canada and even larger gains in some of the foreign countries where the motor vehicle is getting a stronger and stronger hold in transportation, for both pleasure and business.

Continued business recovery will bring larger markets for practically all grades of oils considered as fuel and also prove helpful to lubricants and many of the less important products of the oil industry.

In other words, the petroleum industry can look forward to resumption of increasing demand for its products following a year in which demand for most products leveled off, with a slight decline in a few cases.

There is nothing unusual in this trend in consumption and it does not in itself justify confidence in a good year for the industry. Some of the poorest years it has had have been years in which large increases in demand for its products took place. Many leaders in the industry and economists have elaborated upon this well-known fact in statements issued in the past two weeks.

The industry at this time has plenty of oil in sight and sufficient refining capacity to supply or oversupply any possible market that can develop.

The need is to fully realize this fact and not oversupply the markets whose requirements can be accurately projected almost from month to month in a manner not duplicated by any other industry.

The refining industry as a unit knows rather definitely right now just what the total requirements for its principal products will be throughout the entire year. It should be easy for each individual refiner to determine what his particular share of that market is and not contribute further to the oversupply which has been responsible for the unsatisfactory price situation last year.

The immediate duty, which has been emphasized by everyone who has expressed an opinion about the outlook for 1939, is to prevent an accumulation of excess gasoline stocks in the next 90 days.

It is agreed that stocks on April 1 should not exceed 83,000,000 barrels, or approximately 10,000,000 barrels less than the top inventory last year. This can be accomplished only by maintaining crude runs to stills around 3,000,000 barrels daily until that date. Any expansion simply means that stocks will be excessive and have to be liquidated over the remainder of the year.

There is plenty of fuel oil and other products. If operations are maintained at that allowable all requirements can be supplied and the reward for such restraint will be a stabilization of production which will justify a higher operating level later in the year.

The industry has the outline of its 1939 operations in plain view. The demand will take care of itself. The responsibility of following the supply pattern rests squarely upon those who produce the raw material and refine the finished product in cooperation with the state regulatory bodies.

Programs and Meetings

Southwestern A.P.I. Meeting March 16-19 at San Antonio

The spring meeting of the southwestern district of the American Petroleum Institute Division of Production has been set for March 16 and 17, in the Plaza Hotel at San Antonio, Tex., it is announced by District Chairman W. S. Morris.

E. P. Hubbard, of Gulf Oil Corp., Houston, Tex., has been appointed chairman of the program committee and is seeking suggestions as to authors and topics. Other members of the committee are R. S. Dewey, Humble Oil & Refining Co., Midland, Tex.; T. W. Johnson, United Gas Co., Shreveport, La.; R. H. McLemore, Sun Oil Co., Beeville, Tex.; L. A. Ogden, Pure Oil Co., Fort Worth, Tex.; P. D. Torrey, Sloan & Zook Co., Houston, Tex., and J. E. Warren, Carl B. King Drilling Co., Dallas, Tex.

President Hunter Hopes for Illinois Legislation

HOUSTON, Tex.—J. C. Hunter of Alibene, Tex., new president of the general Mid-Continent Oil and Gas Association, visiting Houston, said: "I am hopeful proaching year. The signs point that way. There is now a distinct effort within the industry to solve its own problems through cooperative effort. That, in my opinion, is a very hopeful sign.

"If the Illinois legislature enacts a conservation law as applied to oil it will steady trade conditions throughout the industry. Our organization as yet embraces no membership among the Illinois oil men, although many Illinois operators are former Mid-Continent producers and association men and therefore are familiar with the objects and methods of our association."

Well-Spacing Rule Needed Says President Gwynn

WICHITA FALLS, Tex.—P. F. Gwynn, president of the North Texas Oil and Gas Association, says:

"The price of North Texas crude oil should be not less than $1.60 a barrel, and that price can only be attained and maintained by the use of an abundance of precaution with reference to new drilling. When new discoveries are made, operators should immediately make a careful study of producing formation and probable structural conditions and adopt a well-spacing rule that allots to each well the maximum number of acres that sound engineering knowledge indicates it could efficiently drain. By so doing, reservoir pressure will be better maintained and the most oil over the longest time and at the lowest cost will be produced.

"Financial institutions now give more consideration to petroleum reserves in place than ever before, and it is believed that such will be of increasing importance in their future deliberations. An operator may produce more barrels per day by excessive drilling but his net worth may be materially reduced. Prudent development and operation of his property will determine his ultimate net worth, maintain the confidence of his bankers and suppliers, and make his own life happier during the process."

North Texas Association

The annual meeting of the North Texas Oil and Gas Association will be held at Wichita Falls February 25.

Dr. T. W. Vaughan President Of Geological Society

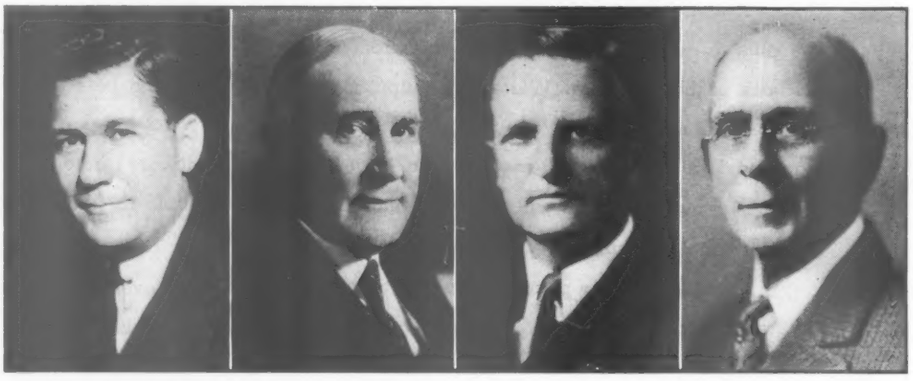
NEW YORK.—Dr. T. Wayland Vaughan of Washington, D. C., senior geologist of the United States Geological Survey, was elected president of the Geological Society of America at its annual meeting in New York last week. He succeeds Dr. Arthur L. Day, former director of the geophysical laboratory of the Carnegie Institution at Washington.

Professor Ralph W. Chaney of the University of California was chosen president of the Paleontological Society to succeed Dr. C. W. Gilmore.

New Mid-Continent Committee

J. C. Hunter, of Abilene, Tex., new general president of the Mid-Continent Oil and Gas Association, has named Raymond M. Myers, of Dallas, Tex., chairman, and Forrest M. Dorrough, of Tulsa, vice chairman of the association's new standing committee on wage and hour laws.

CALIFORNIA OIL AND GAS ASSOCIATION OFFICERS 1939



President, C. P. Watson, vice president, Seaboard Oil Co.; vice president, L. P. St. Clair, chairman of board, Union Oil Co.; vice president, R. E. Collom, vice president, Continental Oil Co.; treasurer, H. L. Westbrook, vice president, Belridge Oil Co.

CALENDAR

January, 1939.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Detroit, Mich., Jan. 9-13.

February.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Engineering Societies Building, New York, Feb. 13-16.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS AND LOUISIANA ENGINEERING SOCIETY, joint meeting, St. Charles Hotel, New Orleans, La., Feb. 23-25.

NORTH TEXAS OIL AND GAS ASSOCIATION, annual meeting, Wichita Falls, Feb. 25.

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March.

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, Ohio, Mar. 6-10.

INTERNATIONAL ACETYLENE ASSOCIATION, 39th Annual Convention, Houston, Tex., March 8-10.

WESTERN PETROLEUM REFINERS ASSOCIATION, annual meeting, San Antonio, Tex., Plaza Hotel, March 20-22.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention, Hotel Severin, Indianapolis, March 14-16.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 24th annual meeting, Skirvin Hotel, Oklahoma City, March 22-24.

April.

AMERICAN CHEMICAL SOCIETY, Baltimore, Md., April 3-7.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 12-13.

OIL-WORLD EXPOSITION, Houston, Tex., April 24-29.

May.

PETROLEUM ELECTRICAL SUPPLY ASSOCIATION AND PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Rice Hotel, Houston, Tex., May 2-4.

NATURAL GASOLINE ASSOCIATION OF AMERICA, Hotel Tulsa, Tulsa, Okla., May 3-4-5.

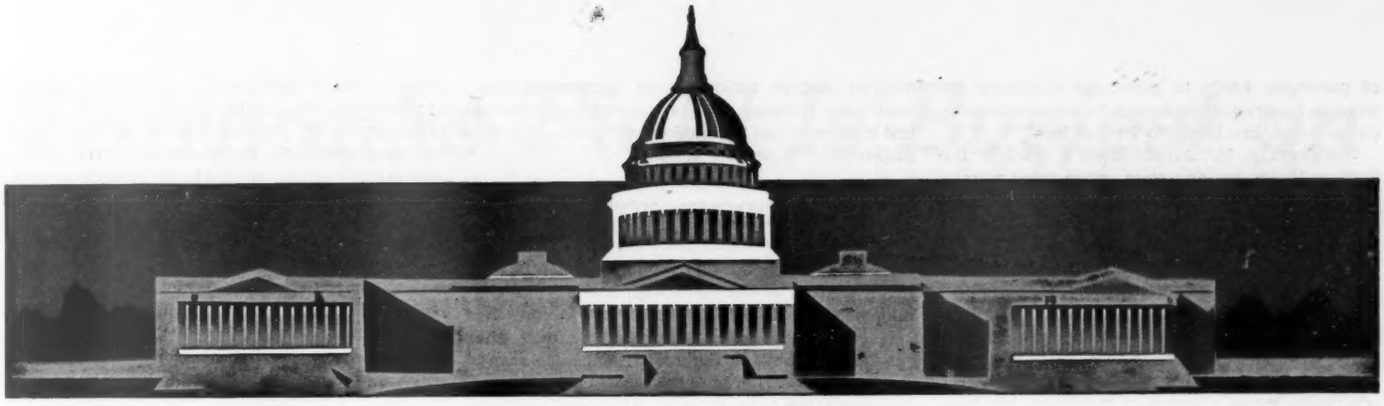
AMERICAN PETROLEUM INSTITUTE, 9th mid-year meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

WORLD AUTOMOTIVE ENGINEERING CONGRESS, sponsored by S.A.E. for New York (May 22-26), Indianapolis (May 30), Detroit (May 31-June 2), San Francisco (June 6-8), May 22-June 8.

June.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.



Antitrust Policy Is Outlined by Justice Department

By HENRY D. RALPH

WASHINGTON, D. C., Jan. 2.—An insight into current administration thinking regarding the regulation of business is given by Assistant Attorney General Thurman Arnold in his annual report of the antitrust division of the Department of Justice.

The report gives only the barest details of the work of the division during the past year and is devoted almost entirely to a discussion of what should be done in the way of new legislation and enforcement policies to promote competition, reduce prices, and increase industrial output and the consumption of goods. Mr. Arnold is a member of the temporary national economic committee and the statements he makes in his report are along the lines of suggestions dropped recently by other important members of this group but carry out the ideas a little more fully. Therefore, the program he outlines may be considered to represent in general the trend of thought among the administration's policy makers on the broad questions usually grouped under the heading of monopoly.

Asks Larger Staff

A very much larger staff with provisions for setting up regional offices is asked by Mr. Arnold, but he justifies this request by painting a picture of how a revitalized antitrust policy would contribute to increasing the standard of living of the entire population. Present attention has been centered on the antitrust laws, he declares, because of the realization that our industrial machinery is not utilized to its full productive capacity at the same time that two-thirds of our families are in need of the goods which might be produced, and he concludes that the crisis in the distribution of available goods compels a reexamination of our ways of business management.

A welcome assurance is given business by Mr. Arnold in his declaration against centralized government regulation of industry. The antitrust laws, he admits, do not offer a complete solution to the problem he poses, but they are the principal legislative and judicial expressions of the competitive ideal which underlies our national economy, continuing: "Today, when that economy is not functioning, it is necessary to consider whether the ideal of independent private business management expressed by the Sherman Act can solve the problem of the efficient use of modern industrial machinery and organization. The alternative is centralized control. This alternative we are unwilling to accept."

Our policy with respect to restraints of trade has never been made effective in the past, he argues, because, although we have wanted a competitive economy, we have not been willing to take the necessary steps to insure its continuous existence, and the results has been that our antitrust laws have presented a somewhat dim outline of the economy we thought we ought to have. His solution is to make the antitrust laws detailed and specific through a policy of widespread and continuing enforcement plus frequent legislative additions as new problems are presented to Congress, plus some sort of government supervision over cooperative business programs which he suggests could be done by his division by means of consent decrees.

An obvious effort to head off the creation of a new bureau of industrial economics or other new agency to take over the regulation of competition is made by Mr. Arnold, and on this point he probably will find himself at odds with some of his colleagues on the T.N.E.C., although their difference will be over means rather than ends. He says his suggestion proposes no general plan of government, but rather a method by which existing machinery may be used by an existing agency to further the production and distribution of goods and services and the employment of labor, by removing restraints and increasing the opportunity for useful enterprise.

The antitrust laws, Mr. Arnold argues, are best suited to this objective for two reasons, first, because through proper enforcement and clarification they can prevent combinations within an industry for the purpose of exercising control over prices and production, and, secondly, because through the use of consent decrees they can become a constructive agency in eliminating existing bottle-necks which restrict increased production and lower prices.

Given an adequate enforcement organization, Mr. Arnold promises to prevent combinations and restraints among both large and small business enterprises through clarification of the antitrust laws by the case method, through regional offices which can keep in close contact with business developments, and through a series of special amendments to the laws. In explaining this program, he declares:

"An important part of our task is to facilitate compliance with the laws by helping conscientious business men to understand them. Forty years of sporadic enforcement of the antitrust laws have created a situation under which the application of the law is confused in almost every concrete industrial situation. This is one of the outstanding difficulties of antitrust enforcement at present.

"The lack of definition of the boundaries of the law has created a vicious circle which runs as follows: It is not fair to enforce the antitrust laws against business men in cases where their application is not clear. At the same time the application never becomes clear because the cases are not brought before the court. The solution to this dilemma lies in understanding the true function of litigation. It should not be regarded as a moral assault upon wicked individuals. It is an orderly means by which general provisions for economic adjustment are made concrete through localization and application to the conditions of a particular industry. . .

Business Should Know

"Business men are entitled to know what kinds of situations will lead to prosecution, because prosecution itself is a most important business hazard regardless of whether the Government succeeds in proving its case."

The antitrust laws have not been the factor they were designed to be because many business men consider them obsolete and pay no attention to them, Mr. Arnold says, while another factor is that in the competitive business struggle self-preservation requires that well-intentioned business men must fight fire with fire, and he declares that with regional offices strategically located and adequately staffed, "we ought to be able to make compliance with the antitrust laws the norm of conduct by respectable business men."

Declaring that the problems of large organizations growing out of the techniques of mass production cannot be solved by blanket legislation relating to many dissimilar industries, Mr. Arnold proposes a continuing policy of specific amendments to the antitrust laws, saying:

"To make the law workable and up to date, amendments to the law should be presented to the Congress at a time when the problem is acute, along with the facts of the particular industry which show the need for the amendments. This approach to the problem of amendment in terms

of particular needs in particular industries enables us to escape battles over broad general principles which are likely to be fruitless."

Incidentally, Mr. Arnold takes a crack at the Tydings-Miller Act and state resale price maintenance laws by referring to a case where all cement bids for a government job were identical except for one, and this bidder was sued for violating the state price maintenance law. "The legislative policies represented by the Tydings-Miller amendment and the Sherman Act came to a head-on collision in this case," he says. "Legislative reconciliation is necessary."

What he calls the constructive use of antitrust administration as a means of regulating big business organizations without breaking them up is discussed at considerable length by Mr. Arnold. He declares:

"It is necessary at all times to understand and take account of the legitimate requirements of efficient mass production and orderly marketing. The large organizations required today for efficient production have necessarily changed our conception of what is a reasonable restraint of trade. The methods of business men in getting along together in an industry composed of individuals checked on every hand by unlimited competition may not be applicable to an industry composed of three or four huge competing concerns. . .

"All too often, price policies of large organizations have not been geared with maximum production of their goods. In the blind desire for temporary profits, they struggle for a large share of what is treated as a fixed lump of potential business, at the prices to which they are accustomed. Huge advertising costs, expensive distribution systems, designed to take away business from others, result. In such a situation, some means must be found to reduce prices in order that productive plants may run at capacity. . .

Orderly Marketing

"To be satisfactory, a method of giving approval to orderly marketing practices designed to lower prices must meet four requirements. First, it must be addressed to the problems of particular industries. A program which may be sound for, let us say, motion pictures, may be useless or positively harmful for steel. Second, any approval given must be for a limited period and must be subject to constant check to determine whether the objectives of lowering prices and increasing volume is being attained. Third, there must be machinery to penalize abuse of the position created by such approval, and such machinery must be certain and expeditious in its effect. Finally, the approval must be in a form which will permit ready reference to the Congress, in order that policies which may be erroneous may be corrected, and that the laws may be amended where they are not adequate to meet the particular situation. Much may be accomplished toward this end through careful and resourceful use of the consent decree. Although lack of enforcement in the past has left the limits of this device uncertain, it is clear that the scope of such a decree in any case may go beyond the issues of the case. . .

"At all times, the test of whether a consent decree should be accepted must be whether it will benefit the public, not whether it will give relief to the department. Only where it appears that the consent decree will yield more constructive results for the consuming public, for employes, and for competitors, than the eventual criminal punishment of the offenders, will proposals for such a decree be entertained. . .

"As so used, it is believed that the consent decree can be of assistance in realizing the balanced objective of checking monopoly control and industrial empire building, and eliminating economic toll bridges, while encouraging legitimate and efficient mass production and facilitating the maintenance of orderly markets."

FOREST CITY

(Continued from Page 13)

pects of the play in this region rests in its reversal of form as compared with the previous developments of the Illinois basin. In this case the independent operators, literally, "jumped the gun," as they say, on the major companies, many of whom are moving in only recently and in cases are contenting themselves with checkerboarding leases simply for protection purposes, or, are picking up isolated leases overlooked in the rush. All geologists must appreciate that successful prospecting in a drift-covered terrain such as this requires all of the skill possible to their science, and as extreme skill calls for extreme expenditures, this original reluctance of the majors in the movement towards active development would seem to have been unfortunate. However, as the oil industry of this country was not created by men who checkerboarded leases for "protection," it is possible that the increased enthusiasm and personal application of the independents will eventually prove to have been a blessing in the area.

While the whole basin area will be found to be featured by a multitude of anticlines and domes, which should determine the sites of the many future tests, there are certain special geologic circumstances which lend their variety to the general complex.

The following numbered references relate to the similarly numbered areas on the accompanying map. (See Fig. 1). It is to be understood that the delimiting lines are simply approximate, and that the areas so distinguished present special geological complexion from the standpoint of oil finding only, and their indication should not properly suggest a disparagement of the areas not so distinguished.

First, those areas (not numbered) which are adjacent to the geosynclinal axes, as indicated, hold promise of lithologic changes which may prove important. An increase in the relative amount of sandstones and shales in these areas may be expected at least locally.

Area No. 1: In Iowa, the shoulder of the Dakota uplift presents relatively increased rock inclination, with possible terracing and locally modified folding.

Area No. 2: A narrow zone of territory on both sides of the Wilson-Thurman fault challenges geologists for its profitable exploitation. This fault has a 280-foot downthrow on the south, its line is irregular, and as it cuts through at least two anticlines of rather major proportions it presents interesting complexities.

Area No. 3: This presents the area, in Missouri and Iowa, where the characteristic north-south folding of the region may be expected to be specially modified by the northwest-southeast influences of the Nemo uplift on the east.

Area No. 4: This area may be understood as the meeting point, and the zone of interaction, between the Ozark uplift proper and the Nemo uplift, insofar as those uplifts have reacted independently. This follows the general course of the Grand River through a considerable part of its course, and extends southeasterly into the adjoining region. It should be found to be a district of special structural featuring.

Area No. 5: This presents the relatively highly inclined shoulder of the Ozark uplift and the westward slops of the Nemaha trough. This area has the possible advantages of more positive oil localization and possible terracing.

Area No. 6: This, the easterly structural slopes of the Nemaha uplift, covers a distinct zone of oil possibility. Throughout this area will be found, additional to the regional folding, and the local folding produced by the evolution of the uplift, basic faults—faults confined to the stratified rocks, lensing and truncation of formations, and, what may sometime prove to be highly important, the phenomena (towards oil localization) that is inherent in what may be called stratigraphic coves, or inliers of the stratified rocks, up, into, and upon, the valleys or depressions of the buried Nemaha hills.

Another area, not indicated on the map, exists in the southern extremity of the basin. As it approaches the Missouri River the regional folding becomes complicated and modified by the east-west folding of the north slopes of the Ozarks; and while the value of this modification may not be easily apparent, there is a positive attraction in this area in the existing truncation of the Silurian rocks, and the Ordovician in part, and their overlap by younger formations.

Obituaries

CHARLES B. BURGER, 58, vice president of Gulf Refining Co., who had been in charge of manufacturing for many years until eight months ago, died at his home in Pittsburgh, January 3. He had been ill for about a year.

SETH LIONEL KEITH, 71, a native of Petrolia, Ontario, and for many years engaged as a driller in foreign fields, died at Sault Ste. Marie, Ontario, recently.

WILLIAM H. DONNELL, 94, an auditor of Standard Oil Co. of New Jersey for 40 years, until his retirement in 1920, died December 26 at his home in Montclair, N. J.

EUGENE L. THOMPSON, 60, vice president of Pueblo Petroleum Co. and a pioneer Oklahoma and Pennsylvania oil man, died in Tulsa, January 1.

JOHN A. THOMPSON, 60, Fort Worth, Tex., died suddenly last week. He was a director of Westbrook-Thompson Oil Corp., which drilled the discovery well on the Hendrick ranch in Winkler County. Born in Madoc, Ontario, he went to Winnipeg in 1906 and from there to Texas.

ARNOTT PRESSINGER, 73, retired assistant controller of Standard Oil Co. of New Jersey, died December 29, in New York. He joined the company in 1888 as auditor and rose to assistant controller. He retired in 1933.

MACO STEWART, of Galveston, Tex., an independent producer, died last week at the Mayo Clinic in Rochester, Minn.

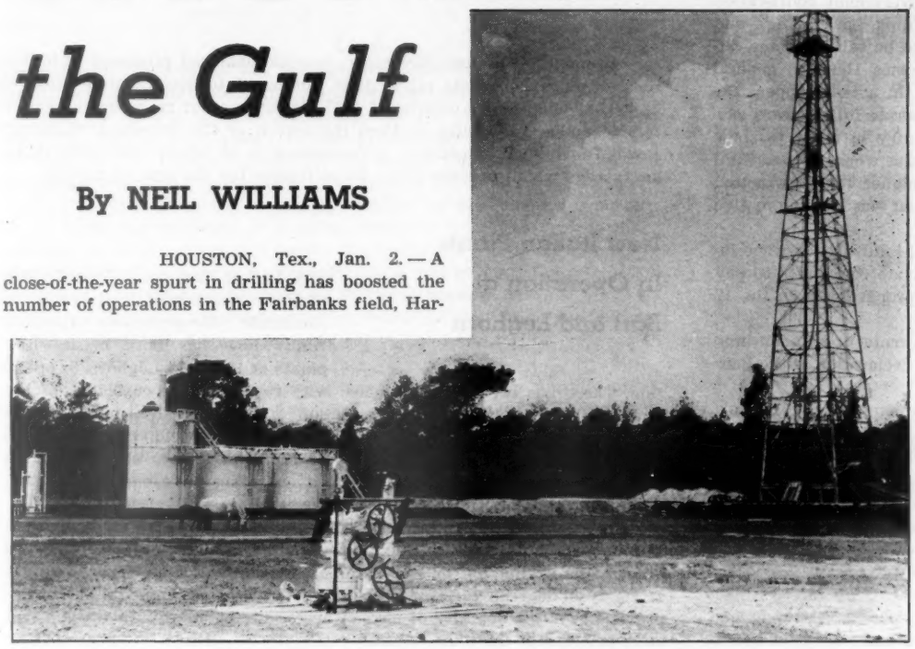
HAROLD P. CHILDS, 57, vice president of Missouri-Kansas Pipe Line Co., died last week. He was born in San Francisco. Before joining Missouri-Kansas Pipe Line Co. he was associated with the Westinghouse Electric & Manufacturing Co. and General Electric Co.

DANIEL O'CONNELL BAYLESS, SR., of Houston, head of the land department of the South Texas division for Texas Co., died in Hermann Hospital, Houston, December 29, after an illness of several weeks. He was born in Cassville, Mo., August 30, 1888. He became associated with Texas Co. in 1919 and before moving to Houston in 1930 was head land man for the West Texas division in Fort Worth.

Fairbanks Field Is Busiest on the Gulf

By NEIL WILLIAMS

HOUSTON, Tex., Jan. 2.—A close-of-the-year spurt in drilling has boosted the number of operations in the Fairbanks field, Harris County, Texas. Fifteen rigs now are running. Next to Jennings, Acadia Parish, Louisiana, where development of flank sands around the old field has been keeping 17 to 20 rigs busy, this is the largest concentration of work in the Gulf Coast.



Producing well and drilling operation in Fairbanks field

Since August, when drilling was curtailed from a peak of 17 active operations in July, the number of rigs has been increasing steadily. Amerada Petroleum Corp., operating jointly with Stanolind Oil & Gas Co., has 10. As new territory is taken in, other companies are expected to increase their work.

Opened less than a year ago—January 15, 1938—Fairbanks has approximated 110 producing wells, exclusive of four rated as gas wells. Of these, more than 75 have been completed since July 1. Accumulated production has reached more than 803,000 bbls., with daily production greatly restricted by proration. Daily allowable averages only about 60 bbls. per well.

Exclusive of the Rosslyn area, a mile east of the main field, and Union Producing Co.'s Goodykoontz extension, nearly a mile northeast of the field, the productive area covers more than 3,200 acres, extending 2½ miles north and south and about 2 miles east and west. With the Rosslyn and Goodykoontz extensions, the productive area would be greatly enlarged. So far, the importance of these extensions has not been determined. In Goodykoontz, Union Producing Co. No. 1 Goodykoontz, the only well, was completed as a gas well, with casing perforated at 7,175-85 feet in a sand somewhat below the producing horizon of the main field. Production in the main field is from a sand at 6,800 feet, generally classified as upper Saline Bayou. The Union well found only gas in that sand and drilled deeper, going to 7,617 feet. Below its present productive level, it found several other sands, although a succession of tests in them proved unsuccessful.

A deep dry hole has been drilled northwest of the Union well, but as erratic sand conditions are known to exist flanking the field, there is nothing to prove that this area will not tie in with the main field. The gas-oil contact is approximately minus 6,705 feet, with the water level at approximately minus 6,740 feet.

Erratic sand conditions have been found in the Rosslyn area, about three-quarters of a mile south of the Goodykoontz extension. Stanolind Oil & Gas Co. No. 1 Fritz Look, which opened this extension area, did not get any sand in the producing zone of the main field and was deepened. Drilled to 7,495 feet, it was plugged back and perforated casing at 6,947-56 feet, where in a sand below the producing horizon of the field, it was completed for a small well. Sinclair-Prairie Oil Co. drilled a well north, and Stanolind a well east, of it, each getting gas. More recently, Union Production Co., in a west offset to the Look well, got the main Fairbanks sand and completed a good producer, giving incentive for drilling up the intervening strip between it and the Fairbanks field.

The same erratic sand conditions have been found on the west side of the main field, indicating, despite several unfavorable wells, that side also is open for further exploration and development.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 Peters is producing, it is believed, from the sand producing in Stanolind's Fritz Look well, which opened the Rosslyn area. This well missed the main Fairbanks sand and drilled to 7,920 feet, finding oil sand at 6,963-85 feet, and gas sand at 7,065-85 feet and 7,221-40 feet. With 5½-inch casing at 7,548 feet, it perforated casing in the oil sand at 6,964-68 feet, where, although showing considerable water, it tested more than 160 bbls. of net oil daily. The same operators' No. 1 Peters, still farther west of the field, was completed early last year as a gasser in the main Fairbanks sand.

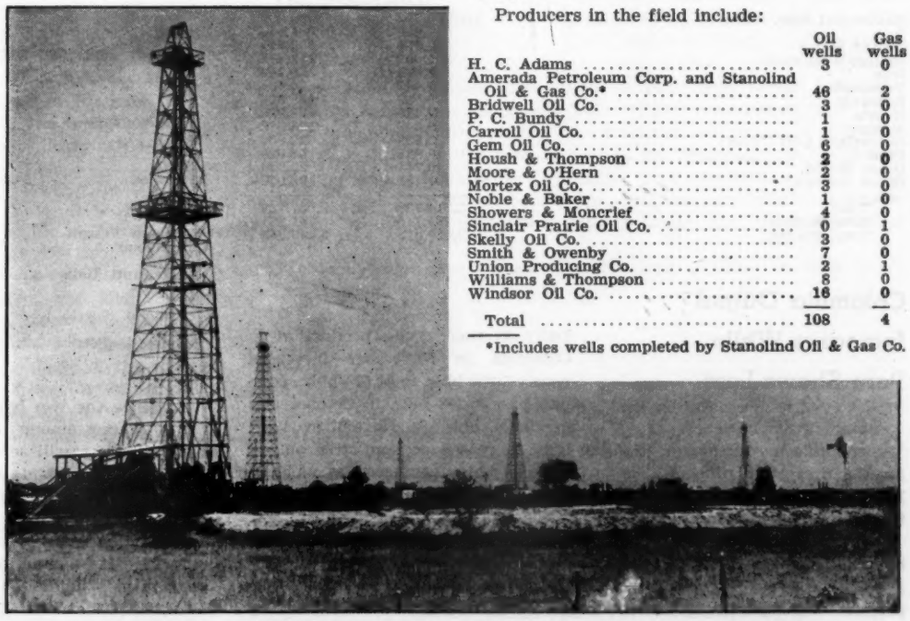
Two wells were being completed in the Rosslyn area, in the main Fairbanks pay, and the results are expected to start an immediate drilling campaign on the east side of the field. The wells are Housh & Thompson No. 1 Yerkes, a south offset to Union Producing Co. No. 1 Warneke, and Sinclair Prairie Oil Co. No. 2 Goodykoontz, another offset to the well on the Warneke property. These wells have pay around 6,832 feet. On the extreme west side Amerada Petroleum Corp. and Stanolind Oil & Gas Co. recompleted No. 2 Peters through perforated casing at 6,966-68 feet, and it produced 129 bbls. in 24 hours through a one-eighth inch choke. The sand is the same as that which produces on the west side, and this may lead to flank drilling around the field.

With drilling time on inside locations averaging around 15 to 20 days, one rig can make one to two wells a month. During November, when not more than 12 rigs were running, 16 wells were completed. In December the number was materially increased, 12 wells having been brought in.

Producers in the field include:

	Oil wells	Gas wells
H. C. Adams	3	0
Amerada Petroleum Corp. and Stanolind Oil & Gas Co.*	46	2
Bridwell Oil Co.	3	0
P. C. Bundy	1	0
Carroll Oil Co.	1	0
Gem Oil Co.	6	0
Housh & Thompson	2	0
Moore & O'Hern	2	0
Mortex Oil Co.	3	0
Noble & Baker	1	0
Showers & Moncrief	4	0
Sinclair Prairie Oil Co.	0	1
Skelly Oil Co.	3	0
Smith & Owenby	7	0
Union Producing Co.	2	1
Williams & Thompson	8	0
Windsor Oil Co.	16	0
Total	108	4

*Includes wells completed by Stanolind Oil & Gas Co.



Fairbanks field, Harris County, Texas Gulf Coast, drilling activity

Mexican Oil Manager Appeals to Workers For Cooperation

The demands of labor unions in Mexico, which culminated in expulsion of 17 American and British oil companies and government confiscation of their refining, producing, and transporting properties in March last year, appear to be causing some difficulty under national administration. Vincente Cortes Herrera, general manager of the Mexican Petroleum Administration, in a radio appeal December 28, urged workers in the oil industry to cooperate fully toward successful exploitation of the oil resources of the country in order to show "Mexicans' capacity." He particularly appealed to the workers to refrain from causing labor troubles in demanding wages higher than the actual output of their work, pointing out that the management was striving to give them higher living standards.

It was the demand by labor syndicates in the oil industry for wage increases and social benefits beyond ability of the private companies to pay that eventually resulted in expropriation of the oil properties from the 17 leading companies.

It was reported in Mexico last week that the government will continue to sell oil to Germany and Italy despite the solidarity declaration at the Pan-American Conference at Lima, Peru.

Meanwhile, the Chamber of Deputies passed an amendment to Mexico's Constitution, providing that exploitation of oil and hydrocarbons shall no longer be a matter of concessions for private companies, but shall be handled directly by the government.

The resolution, originally sent to the chamber by President Lazaro Cardenas after the expropriation decree of March 18, 1938, had been turned over to a special committee, which reported favorably on it. The measure must be approved by state legislatures before it becomes law.

United Kingdom Petroleum Imports Increase 5 Per Cent

During the first 10 months of the current year the United Kingdom imported 2,714,758,000 Imperial gallons of petroleum from 11 main suppliers and probably that many more listed as "others." The total petroleum imports represent an increase of 127,619,000 gallons over the same period in 1937, a gain of nearly 5 per cent. Petroleum imports tapered off in October to 239,128,000 gallons, a loss of 12,382,000 gallons compared with October, 1937.

The most significant changes disclosed by the accompanying table are the decline of Mexico and the rise of the United States and Venezuela. Receipts from Mexico have declined nearly 56 per cent, according to the accumulative totals in the table, while Venezuela has increased more than 72 per cent, the United States by nearly 46 per cent, the British West Indies by 28 per cent, and Iraq by 14 per cent. Deliveries from Peru, which consist of crude only, are off more than 70 per cent and from Rumania by 40 per cent.

	Jan. to Oct. 1938	Jan. to Oct. 1937
	(1,000 Imperial gal.)	
Netherland West Indies	950,252	934,906
Iran	517,639	531,647
United States	457,531	293,671
British West Indies	154,002	119,472
Iraq	123,920	99,742
Venezuela	121,407	70,435
Rumania	75,589	128,024
Russia	67,475	68,910
Mexico	59,648	134,642
Netherland East Indies	25,539	22,336
Peru	19,881	68,025
Other British	40,744	22,379
Other foreign	101,131	92,950
Total	2,714,758	2,587,139
Total British	194,746	141,851
Total foreign	2,520,012	2,445,288

Colombia Output Increases While Peru Shows Loss

Daily average crude production in Colombia in November increased nearly 1,300 bbls. to 61,514 bbls., compared to 60,278 bbls. in October and to 59,921 bbls. in November, 1937. The month's production of 1,845,420 bbls. increased accumulative output for the first 11 months of 1938 to 19,425,006 bbls., compared to yield of 18,472,890 bbls. for the same period in 1937. Colombian production figures include only output from Tropical Oil Co.'s concession.

Production from Peru during November is estimated at about 1,317,000 bbls. International Petroleum Co., Ltd., produced 1,096,679 bbls., a daily average of 36,556 bbls., compared to 35,885 bbls. in October. However, production this year remains materially below the 1937 rate. In November, 1937, International produced 39,389 bbls. daily or a total of 1,181,673 bbls. for the month. Through November, International had produced 12,163,084 bbls. of Peruvian crude oil in 1938, compared to accumulative yield of 13,490,541 bbls. for 11 months of 1937. In arriving at an estimated figure for November production in Peru the output of Cia. Petrolera "Lobitos," Royal Dutch-Shell subsidiary, is considered to be about 7,340 bbls. daily, an average which prevailed on official figures for the first 10 months.

INTERN

New Italian Plants In Operation at Bari and Leghorn

The Italian National Administration of Hydrogenation of Fuels (Azienda Nazionale Idrogenazione Combustibili) now has both of its new plants at Bari and Leghorn in operation. There has been nothing issued with regard to the capacities of the two new refineries, but an examination of the revised assignments for gasoline and gas oil indicate that the combined yield will be in the neighborhood of 255,000 bbls. of motor fuel and 193,000 bbls. of gas oil annually. The plant at Bari is reported operating on Albanian crude oil while that at Leghorn is using East Texas oil.

The committee of petroleum firms, under the direction of the Special Bureau of Liquid Fuels (Ufficio Speciale dei Combustibili Liquidi), has divided the production of the National Administration of Hydrogenation of Fuels among the various distributors. The new assignments also make provision for the quantity of alcohol necessary for admixture (established at 12 per cent of the total volume).

The following tables show the preceding assignments, made under the collaboration agreement, the present additional assignments and the revised total distribution assignments, per company:

REVISED 1938 DISTRIBUTION ASSIGNMENTS OF GASOLINE (AUTOMOBILE)

(Data confined to Automobile Gasoline—does not include Aviation Gasoline)

	Metric tons			
Company—	Preceding assignments	Additional gasoline assignments	Additional alcohol assignments	Revised total distribution assignments
AGIP	102,500	9,328	2,663	114,491
SIAP	89,120	8,110	2,315	99,545
Nafta	66,255	6,029	1,721	74,005
Petrolea	15,500	1,410	402	17,312
APIR	16,000			
Aquila	20,000	1,820	519	22,339
Romana Petroli	2,500	228	65	2,793
CIPSA	16,000	1,456	416	17,872
Mataloni	1,400	127	37	1,564
Carburanti Italia	3,000	273	78	3,351
Gardella	3,300	300	86	3,686
Tagliabue	1,000	91	25	1,116
Petroli D'Italia	600		14	614
Permolio	5,200	473	135	5,808
Carbol	1,200			
Lombarda Petroli	1,900	100	48	2,048
Total	345,475	29,745	8,524	366,544

REVISED DISTRIBUTION ASSIGNMENTS OF GAS OIL, 1938

	Metric tons		
Company—	Preceding assignments	Additional assignments	Revised total distribution assignments
AGIP	49,200	5,949	55,149
SIAP	44,785	5,984	50,769
Nafta	59,090	7,895	66,985
Petrolea	9,830	1,326	11,156
APIR	7,500		
Aquila	13,635	1,834	15,469
SIO	5,750	777	6,527
Romana Petroli	700	89	789
Tagliabue	5,310	701	6,011
CIPSA	4,000	544	4,544
Carburanti Italia	1,490	200	1,690
Gardella	2,165	291	2,456
API	2,250	302	2,552
Permolio	3,405	457	3,862
Carbol	1,410	195	1,605
Lombarda Petroli	1,900	100	2,000
Total	204,920	26,644	231,564

Since the two hydrogenation plants in Italy have attracted considerable interest among the world's refiners it is interesting to examine the purpose they will serve in the nation's search for petroleum autonomy. Primarily, the plants were constructed for conversion of low gravity, viscous and sulfur-contaminated crude obtained from Albania into products meeting requirements of modern Diesel, automotive and aviation engines.

In the period since Italy began her intensive development of the oil reserves in Albania, output in Albania has increased materially. Production, which amounted to less than 2,000 tons in 1933 and to little more than 4,000 tons in 1935, is estimated for 1938 at more than 100,000 tons, or 730,000 bbls. This progress has been made possible by the investment of

approximately 200,000,000 lire through the Azienda Italiana Petroli, the government-subsidized company operating Albanian properties.

The low quality of Albanian crude and the difficulty of obtaining adequate yields of good quality refined products by more normal refining methods were the factors primarily responsible for erection of the two hydrogenation plants, particularly that at Bari which has been in operation for about five months. Operating data on the Bari plant are meager, but quality and quantity of gasoline obtained from the hydrogenated Albanian crude are practically double the yield from less complex methods and, in addition, a residue is obtained which can be used for production of asphalt, road oil and for burning in naval vessels. Residual products from Albanian crude obtained by the conventional distillation and thermal cracking operations were of no practical value, according to information now available.

The relatively short sea route from Albania to Italy permits movement of the crude cheaply and rapidly while the danger of blockade in the event of war is remote. The Devoli field in Albania is estimated in some quarters to contain reserves of 85,000,000 bbls. Italy has a concession extending for 50 years, but it is evident from recent performance that Italy's internal petroleum requirements are increasing at a much more rapid rate than producing operations in Albania. During the first six months of 1938 Italy's crude oil imports increased 108 per cent over the receipts for the first half of 1937. This increase is not indicative of the margin by which consumption increased, but reflects the degree to which Italy's refining industry has developed in less than two years. Facilities either have been or are in process of construction for handling 300,000 tons, about 2,000,000 bbls., of Albanian crude through the port of Valona. The pipe line linking the Devoli field with the port has a capacity of 1,000 tons, nearly 7,000 bbls. daily.

The Bari hydrogenation plant is said to have a producing capacity of approximately 1,000,000 bbls. of gasoline per year. From the available information it appears that Italy's latest hydrogenation plant at Leghorn must rely on crude oil imported from a source other than Albania for some time. At present the Leghorn plant is operating on East Texas oil, but details do not disclose whether the charge stock is crude, reduced crude, gas oil, or residual oil.

Crude Production In Egypt Continues Upward Trend

The sharp upswing in Egyptian crude oil production making its first appearance in August when output amounted to 20,331 tons continued in September with total yield of 22,290 tons for the month. The July production total was only 11,862 tons. Daily average production in September was 5,312 bbls. compared to 2,735 bbls. daily for July, the last month in which only output from the old Hurghada field was included. Production of 145,366 bbls. in August and of 159,375 bbls. in September reflects the importance of the new Ras Gharib field opened by Anglo-Egyptian Oilfields, Ltd., an operating unit controlled by Royal Dutch-Shell. Indications are that nearly 2,600 bbls. per day is being produced from the newly discovered field.

Shipments From Curacao-Aruba During October

Petroleum exports from the Dutch West Indies jumped more than 2,000,000 bbls. in October over September shipments and reached the highest point since the middle of the year. Total petroleum exports from Curacao and Aruba, where Royal Dutch-Shell and Standard Oil Co. of New Jersey operate two of the world's largest refineries, reached 15,739,684 bbls. in October, a gain of 2,167,086 bbls. over the total of 13,572,598 bbls. shipped in September.

Residual fuel oil accounted for the gain, shipments of this product totaling 10,279,625 bbls., an increase of 2,649,308 bbls. over exports in September. The sharp increase in shipments may be considered indicative of the upswing in world demand for this material.

An increase of 121,738 bbls. in gasoline exports from Curacao to a total of 1,208,899 bbls. for the month more than offset a decline of 30,441 bbls. to 1,127,715 bbls. in shipments of motor fuel from Aruba. Gas oil exports from Curacao almost doubled, totaling 719,888 bbls., but a decline of even greater proportions in movement of this product from Aruba produced a deficit in October of 16,213 bbls. in combined exports from the two islands.

No crude oil was reported shipped from Aruba in October, but there were shipments of lubricating oil totaling 84,329 bbls. which was considerably greater volume than represented by crude exports during the preceding three months. Details of exports for October and the preceding three months follow:

DUTCH WEST INDIES EXPORTS
(In barrels of 42 gallons)

Products—	July	August	September	October
Curacao				
Kerosene	105,995	41,643	121,861	109,165
Fuel oil	3,992,367	4,191,854	4,125,022	5,903,739
Gasoline	1,229,606	858,677	1,087,161	1,208,899
Gas oil	436,649	138,849	382,104	719,888
Diesel oil	295,931	406,854	289,058	238,547
Lube oil	71,008	128,777	744,600	189,600
Crude oil	729,344	877,835	622,797	518,112
Total	6,860,900	6,644,489	7,372,603	8,687,950
Aruba				
Kerosene	410,161	389,446	329,327	471,025
Fuel oil	3,445,482	4,571,888	3,505,295	4,375,886
Gasoline	1,476,477	1,474,208	1,158,156	1,127,715
Gas oil	469,937	255,221	567,935	213,958
Diesel oil	388,236	554,442	565,796	778,821
Crude oil	48,864	49,157	73,486	.....
Lube oil	.....	.....	.....	84,329
Total	6,239,157	7,294,362	6,199,995	7,051,734

Netherlands East Indies Production Three Per Cent Less

Netherlands East Indies crude oil production in the third quarter of 1938, which amounted to 1,810,250 metric tons, was 3 per cent smaller than the 1,865,048.6 metric tons of the previous three months and 3.5 per cent smaller than the 1,876,131 metric tons of the corresponding period in 1937. Production in the Djambi, Palembang, Tarakan and Ceram fields showed some increase during the period, but this was more than offset by declines in Java and Madura, North Sumatra and East Borneo. Details of the production of the respective fields follow:

NETHERLANDS INDIES CRUDE OIL PRODUCTION
(In metric tons)

Oil fields—	3rd quarter 1937	2nd quarter 1938	3rd quarter 1938
Java and Madura	274,834.3	259,108.7	213,675.5
North Sumatra	209,728.1	227,367.2	200,488.2
Palembang	706,846.6	696,313.2	701,123.5
Djambi	230,671.6	242,188.9	257,142.9
East Borneo	250,592.7	246,144.4	235,544.5
Tarakan	184,493.3	175,749.9	180,905.0
Boenjoe	.....	.....	.....
Ceram	18,964.4	20,076.3	21,370.4
Total	1,876,131.0	1,865,948.6	1,810,250.0

Note: 7.606 U.S. bbls. equal one metric ton.

Decline in Iran Production Continues Through September

The slump of crude oil production in Iran which has been steady since reaching an all-time peak of 1,078,393 tons last March was continued through September. Official production figures for September show output to have been 739,000 tons compared to 763,000 tons in August and with 937,000 tons in September, 1937. For the first nine months of 1938 Iran produced 7,464,000 tons compared with 7,577,000 tons for the same period in the preceding year. Although the rate of production has been dropping since March it was not until September that 1937 output caught up with the accumulative total for 1938. This was due to exceptional activity in the first three months of the year.

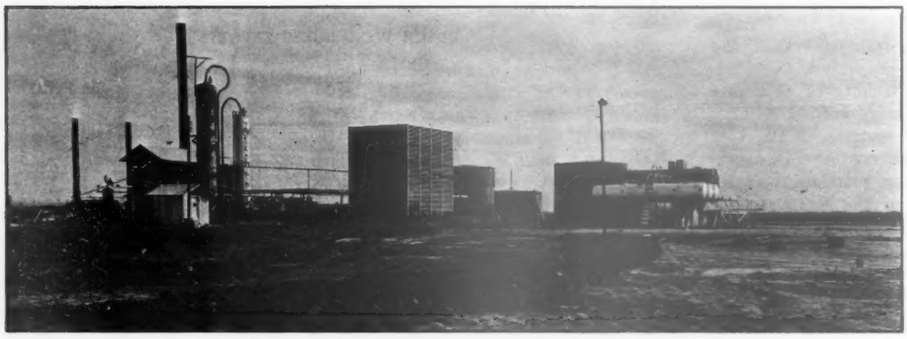
The conversion factor most generally used is 7.515 U.S. bbls. of 42 gallons per ton.

Czech Production In October Hits New 1938 Peak

Czechoslovakian crude oil production in October increased to a new high for the year of 14,760 bbls., a gain of nearly 26 per cent over the output for September. In terms of American oil production, the Czechoslovak yield is relatively unimportant; but due to the scarcity of native production in central European countries, it exercises a much greater influence than the volume would indicate.

The production in October, 1938, was more than 26 per cent greater than registered in the same month of 1937, when the yield totaled 11,665 bbls. From January to October, Czechoslovakian production in 1938 totaled 119,850 bbls., compared to 106,840 bbls. for the same period in the preceding year.

Refinery Expansion



Mankins Oil & Refining Co. new plant at Mankins, Archer County, Texas

Mitchell Plans to Operate Lakeview Plant at Bakersfield

Purchasing the old Lakeview refinery in the Bakersfield district at auction for $55,350, A. D. Mitchell, of Long Beach, declared that he intends to make the refinery an operating unit as soon as possible. He purchased the plant and 160 acres surrounding it.

For several years under a receivership, the refinery was only operating eight days every month. The plant has a capacity of from 1,500 to 2,500 bbls. per day. Mr. Mitchell has extensive holdings in the Los Angeles Basin. At the same time he purchased the 21-acre El Dora and the 30-acre El Dora Smith leases near Maricopa.

Circuit Court of Appeals Holds Lewis Patent Valid

On December 21, 1938, the Circuit Court of Appeals for the Third Circuit, held valid Lewis Patent No. 1,680,421 relating to side-stream stripping in a rehearing of its previous decision in the case of the Atlantic Refining Co. vs. James B. Berry Sons Co., Inc. This opinion upholds the decision which was handed down a year ago when the case was argued before the Court of Appeals for the Third Circuit. This case was first tried in the District Court for the Western District of Pennsylvania in April, 1935, when the decision rendered held the patent invalid.

Anco Refining Co. Will Enlarge Plant

It is reported that the Anco Refining Co., of Garnett, Kans., which started up some months ago, plans to make enlargements of its plant. Details are lacking.

Richfield Adding 10,000-Bbl. Acid Treating Unit to Watson Plant

The Stratford Development Corp. announces that the Richfield Oil Corp. has recently been licensed for the use of the Stratcold acid-treating process. The first unit under this license, having a daily capacity of 10,000 bbls., will be constructed by the Stratford Engineering Corp. in the Watson, Calif., refinery.

Dubbs Cracking and Poly Unit to Be Installed at Glacier Plant

Executives of the Glacier Production Co. have announced plans concerning the construction of additional refining facilities at their Cut Bank plant. A Dubbs cracking and polymerization unit will be installed.

Steam from the Glacier Production Co.'s absorption plant east of Cut Bank will be used to operate the new units which will be located on a 56-acre plot adjacent to the present site. The capacity of this new plant will be 150 bbls. per calendar day and 1,650 bbls. per stream day. Crews will start work on construction of tankage and pipe line extensions.

Sunray Polymerization Unit Completed at Allen, Okla.

The Sunray Oil Co. announced the completion of a catalytic polymerization unit at its refinery at Allen, Okla. It is now in operation, producing a finished poly gasoline.

Imperial Oil, Ltd., Will Build Bauxite Plant at Regina Refinery

REGINA, Saskatchewan.—Imperial Oil, Ltd., will increase the processing capacity of its refinery here 50 per cent by construction of a bauxite plant for treatment of Turner Valley crude. The new plant, costing $300,000, will replace the present temporary plant. Construction has already begun. The plant, now processing 6,000 bbls. daily, will handle 9,000 bbls. of Turner Valley crude on completion of the program. The company also plans to enlarge its cracking plant next March at a cost of $125,000.

R. C. Osterstrom Manager of Pure Toledo Refinery

CHICAGO, Jan. 3.—Appointment of R. C. Osterstrom as resident manager of the Pure Oil Co.'s Toledo refinery was announced here today. He assumed his new duties at once. O. B. Wendein will continue as superintendent of operations. Mr. Osterstrom has been with the company for 15 years in the refining division, and his present transfer takes him from the Chicago headquarters.

Pure Closes Muskogee Plant

MUSKOGEE, Okla.—The Pure Oil Co. refinery has been closed down.

Ethyl Plans to Expand Chloride Plant at New Orleans

A new tax exempt contract announced by Gov. Richard Leche of Louisiana discloses that Ethyl Gasoline Corp. plans an addition to its chloride plant at New Orleans at a cost of $595,000.

Wilcox Leases Bristow Plant for Operation by W. M. Fraser

W. M. Fraser, superintendent of the H. F. Wilcox Oil & Gas Co. refinery at Bristow for the past several years, will head a new concern, independent of the Wilcox company, to take over its pipe line and refining activities. Mr. Fraser has leased all the company's pipe lines and the refinery at Bristow. The Wilcox name will still be used on the company's refined products, but the firm will be completely independent of the producing end of the Wilcox company. The new firm will be known as the Wilcox Refining Division.

Socony-Vacuum Buys Steel

Socony-Vacuum Oil Co. has ordered 1,200 tons of steel, according to Steel. The material is for both refinery betterment and new pipe lines.

Natural Gasoline

Phillips Buys Holdenville Plant From J. E. Crosbie, Inc.

Phillips Petroleum Co. has taken over the former J. E. Crosbie, Inc., gasoline plant west of Holdenville and converted it into a booster station, suspending gasoline manufacturing operations.

Texas Co. Building Pressure Plant In Lake Centralia-Salem Field

The Texas Oil Co. has begun construction of a pressure maintenance plant in the Lake Centralia-Salem field, Illinois, similar to the plant recently completed by the Carter Oil Co. in Fayette County. The unit will be located on the company's Shanafelt lease. Gas from producing wells will be piped to the plant where gasoline will be removed. Residual gas will be pumped back into the ground through input wells.

Recycling Plant for Grapeland, Tex., Project to Be Constructed Soon

FORT WORTH, Tex.—American Liberty Oil Co., of Dallas, last week made its first move in the planned construction of a gas recycling plant near Grapeland, Tex., by acquiring surface rights and pipe line right of way for the gas system. The plant will be adjacent to the north city limits of Grapeland and construction is to be started soon after January 1. It will take gas from the Woodbine horizon, extract the distillate and return the residue to the same horizon.

N.G.A.A. Is Moving Its Headquarters to New Location

The Natural Gasoline Association of America is moving its headquarters from the Wright Building to 923 Kennedy Building, Tulsa, after having spent eight years in the former location. First meetings were held in the new quarters December 28. A more central location and air-conditioned rooms will make the new headquarters convenient and comfortable for the membership, according to J. A. La Fortune, Warren Petroleum Corp., president of the association.

Barnsdall Increases Capacity Of Revamped West Texas Plant

The Barnsdall Oil Co. has completed the rebuilding of its gasoline plant in the Foster field, near Odessa, in West Texas, and has placed it in operation. Revamping was necessitated by damage to the plant by fire. The capacity of the plant has been increased by the addition of two 230-hp. gas-engine-driven compressors and another stabilizing tower.

Natural Gas News

Columbia and Peoples Gas Companies Are Merged

HARRISBURG, Pa.—Approval has been given by the Public Utility Commission to a merger of Columbia Natural Gas Co. and Peoples Natural Cas Co. of Pittsburgh under the latter name. The commission said no protests were filed against the merger plan. Columbia company operates in Allengheny, Armstrong, Greene, Washington and Westmoreland counties and Peoples company in Allegheny, Armstrong, Beaver, Blair, Cambria, Fayette, Greene, Indiana, Washington and Westmoreland counties.

The commission stipulated these conditions:

1. That the approval is not to be understood as requiring the commission, in any proceedings that may be brought before it for any purpose, to fix a valuation on the physical property and other assets of the Peoples Natural Gas Co. (new) equal to the amount at which the physical property and other assets are to be recorded in the accounts of the company, or to prescribe or approve rates sufficient to yield a return thereon.

2. That the Peoples Natural Gas Co. (new) shall adopt as its initial rates and charges the present rates and charges of the Columbia Natural Gas Co. and the Peoples Natural Gas Co. for service to the respective consumers of the two companies.

3. That all books, accounts, papers, records and memoranda of the two companies be kept segregated from each other (as to companies) and be preserved, until such time as the commission may otherwise authorize.

4. That approximately $9,000,000 of writeups on the books of the two companies be eliminated, about one-half to be eliminated by charges to depreciation and amortization reserves and surplus, and the remaining half to be eliminated by charges to surplus over a term of years to be later fixed by the commission.

Chairman Weymouth Plans Natural Gas Contests

Two essay contests sponsored by the American Gas Association and directed to the attention of the natural gas industry have been announced by Thomas R. Weymouth, chairman of the Natural Gas Section of the association. A total of $150 in prizes is being offered for the best essays submitted in each contest before March 15.

The subject selected for the first contest is "The Duties of a Local Manager." The second contest covers "The Duties of a District Manager."

Prizes in each contest will be: First, $25; second, $15; third, $10; five honorable mention prizes, $5 each. Each contest will be run separately.

The authors of the prize winning papers will present them at the annual meeting of the Natural Gas Section at Tulsa, in May, 1939, during a session devoted to the problems of local and district managers.

Denver Seeking Reduction In Natural Gas Rates

DENVER, Colo.—The city and county of Denver have filed a complaint before the Federal Power Commission seeking a reduction in natural gas rates charged by Public Service Co. of Colorado for gas piped into this city from Texas. Colorado Interstate Gas Co., which operates the line from the Texas-New Mexico line to Denver; the Canadian River Gas Co., which transports the gas from the Panhandle field to the New Mexico border, and Public Service Co. are named as defendants.

Public Service Co. recently had before the Securities Exchange Commission a proposal for issuance of around $52,000,000 in securities to refund underlying liens and consolidate its capital structure. It was stated that upon the granting of a permit the company would negotiate lower gas rates for Denver, but the petition was withdrawn before action was taken. The complaint filed by the city of Denver followed.

It is alleged that reduced rates cannot be granted Denver by Public Service Co. unless it obtains a reduction in rates on the gas from Texas. This is based on a charge of 40 cents per 1,000 cu. ft. at the Denver gate for gas supplied the city, which it alleges, is unfair compared with gas coming through the same line from the same field and sold to Colorado-Wyoming Gas Co. (Public Service) at Denver at 17 cents for transportation and distribution in northern Colorado. Gas also, it is stated, is sold to Colorado Fuel & Iron Co. at Pueblo at the 17-cent rate.

The complaint alleges that "the companies do not deal with one another at arm's length but are all controlled by one and the same group of persons through common ownership of stock and interlocking directorates." The complaint further charges all the companies named are affiliated with Cities Service Power & Light Co.

The Texas line was put into operation in 1928 and investigations have been undertaken since. In one the State Public Utilities Commission held the companies were doing an interstate business and that it had no jurisdiction. The Interstate Commerce Commission also held it had no jurisdiction and the Federal Power Commission at the time had no authority. Congress at its last session gave the power commission authority to investigate and change rates and it is under this authority the city has taken action.

In 1937 there was a report current that Ohio Oil Co. and the California Co. were considering construction of a line from the Carbon County, Wyoming, fields to Cheyenne and northern Colorado. The story was denied. Early in 1938 J. Kirk Baldwin, Wyoming state treasurer, outlined a plan for piping gas from Wyoming to Cheyenne and northern Colorado. Indications pointed to North Central Gas Co. as the interest the official had in mind. About the same time Public Service Co. indicated some concern regarding its future source of supplies and was investigating feasibility of augmenting its supplies from Texas for use in an emergency. This was not construed as indicating any possible shortage of gas in the Texas district but rather a study to fortify its position as a distributor.

Export Alberta Gas

COUTTS, Alberta.—The United States Power Commission has granted a short term permit to the Montana-Dakota Utilities Co. of Minneapolis, operating in Montana and other states on the international boundary, to import natural gas from the Alberta fields.

Pipe Line Activity

Pipe Line Construction in South Texas Fields

HOUSTON, Tex.—Corpus Christi Corp. has started construction of a 30-mile 4-inch welded distillate line from the Agua Dulce field, Nueces County, to Corpus Christi. The line is in conjunction with the company recycling plant now under construction. It is being laid by Williams Brothers Corp.

Phillips Petroleum Co. has started construction of a 4-mile 6-inch oil line from the League City field, Galveston County, to Pan American Production Co. main line, east of the field, which extends to Texas City. Phillips Petroleum Co. has also completed a 6-mile 4-inch gas line from the Dickinson field to League City which supplies fuel to five drilling rigs.

Houston Oil Co. has started construction of a 12-mile gas line from the Spanish Camp field in Wharton County to the company's main line between Hungerford and Wharton. The company recently purchased the six gas wells in the field and 4,000 acres from Albert Plummer, independent operator of Houston.

Oil Hill-Valley Center Line Being Replaced

Truman & Smith Construction Co., Eldorado, Kans., is laying 5 miles of 10-inch pipe and 2 miles of 12-inch pipe for Texas-Empire Pipe Line Co. from Oil Hill to Valley Center, Kans. The line will replace a 12-inch carrier.

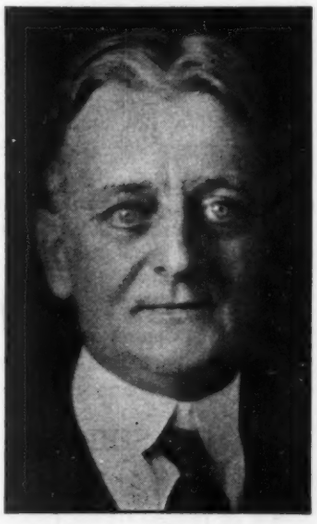
Gas Distribution Permitted

WOODSTOCK, Ontario.—The Ontario Municipal Board has granted permission to Oxford Pipe Line Co. to distribute natural gas throughout the township of North Oxford. The gas will be supplied from the Brownsville field, where the company controls extensive production and operates a purification plant.

Line From the Kelsey Field Is Being Surveyed

FORT WORTH, Tex.—Tentative plans for a $500,000 pipe line to serve the new Kelsey field in southeast Jim Hogg County are reported to have been made by Humble Oil & Refining Co. The proposed pipe line, right of way for which is being surveyed, will connect with Humble main line from Webb County and Duval County to Corpus Christi, the connection being planned at Benavides, a distance of 56 miles, probably an 8-inch welded line.

P. R. Applegate President of Indiana Pipe Line Co.



P. R. APPLEGATE

D. S. Bushnell, president of Indiana Pipe Line Co. for the past 27 years, has retired. P. R. Applegate, vice president, who has been actively connected with the company for many years, has been elected president. Mr. Bushnell will continue to be associated with the company in an advisory capacity and as chairman of the executive committee of the board of directors.

Service on Colombian Developments

Petroleum operations in Colombia at this time are confined to a small fraction of its 460,000 square miles. Two adjoining fields are producing the only crude that is being marketed at this time. These fields are located in the De Mares concession owned and operated by the Tropical Oil Co. North and south of this concession, there are several additional concessions in the exploitation and exploratory stages of development, the area totaling more than 2,000,000 acres.

As is the case in most of the South American fields, petroleum activities in Colombia do not stop with the drilling and operation of producing properties, the transportation of crude oil and the refining of finished products. Those properties already in operation and those in prospect are located in isolated areas. This has necessitated the construction of highways and railways, housing for married and bachelor employes, installation of power and water systems, machine shops, schools, amusement centers and all the other living and operating facilities generally provided by others.

The principal operations covered in this service are those of the Tropical Oil Co., controlled by the International Petroleum Co., Ltd. (Imperial Oil, Ltd.), which has its principal operating offices in Toronto, Canada. The De Mares concession consists of approximately 1,300,000 acres. It has a frontage of 75 miles along the Magdalena River which is the principal transportation artery for the shipment of supplies and equipment required in the operation of the concession. The refinery operated by the company is situated along the river. The headquarters of the company are located at El Centro, adjoining the two fields. This camp is about 15 miles inland from the refinery with a company-owned railway connecting the two points.

SHIPPING FIELDS

Name of field

Official name for the complete property is the De Mares Concession of Tropical Oil Co. Present producing area of the concession is comprised of two sections, these called the Infantas and La Cira structures.

Location

Concession is located in the west central section of the Departamento de Santander, in Colombia, S.A., 636 kilometers or 395 miles up the Magdalena River (south) from seaport city Barranquilla. River terminal for field is the village Barranca-Bermeja.

General geology

The Infantas structure is a faulted anticline of more or less normal type, i.e., with major fault running its entire length and a few minor dip faults at right angles thereto. Proven area of the structure is roughly 2 kilometers* in width by 11 kilometers long. The main producing zone is a Tertiary sand zone ranging from 300 to 500 feet in thickness with its top lying at a depth from surface of roughly 700 feet along main fault to around 2,700 feet on west side. Another small sand is present at about 500 to 700 feet above this main zone over most of the Infantas structure, but it is commercially productive in an area of only about 3 square kilometers.

The La Cira structure is a faulted dome type with one main fault and several minor transverse faults. Productive area outlined to date is roughly oval in shape, having a length of around 8 kilometers by a width of 6 kilometers. Formation is likewise Tertiary and there are three producing sand zones overlying each other, the depths from surface to their tops at crest of dome being roughly 700 feet, 1,400 feet, and 2,300 feet, respectively. The sand zones are about 200, 400, and 500 feet thick at crest and lense out toward edges. The dip is such that bottom zone is at roughly 4,000-foot depth along edges of structure.

*One kilometer equals .62137 (approximately five-eighths) mile.

Producing area

Following are various operating data, divided according to structures and for total field. Production data are as of November 1, 1938:

	Infantas structure	La Cira structure	Total field
Present number of wells drilled	469	481	950
Number of wells abandoned to date	18	3	21
Number of wells produced in October, 1938	301	398	699
Avg. daily net oil production, bbls.	14,271	46,007	60,278
Avg. daily gas being returned to sands, m.c.f.	4,014	13,270	17,284
Net gas-oil ratio (less gas returned) cu. ft./bbl.	1,590	1,200	1,290
Number of wells pumped—October	295	352	647
Number of wells flowed—October	6	46	52
Number of wells artificial lift—October	0	0	0
Number of wells repressuring—October	16	15	31
Present input pressure to RG key wells, lbs.	215-480	560-690	215-690
Average gravity of crude—°A.P.I.	25.0-27.5	20.0-25.0	24.5

Pipe line outlets for field

Production from Infantas and La Cira is 60,000+ bbls. per day at present, part of which is run in the local refinery, and the remainder is shipped through the Andian National Corp. pipe line from El Centro to ocean terminal at Cartagena. The latter line is an almost completely looped double 10-inch pipe system, having 10 pump stations along its total approximate 538-kilometer length.

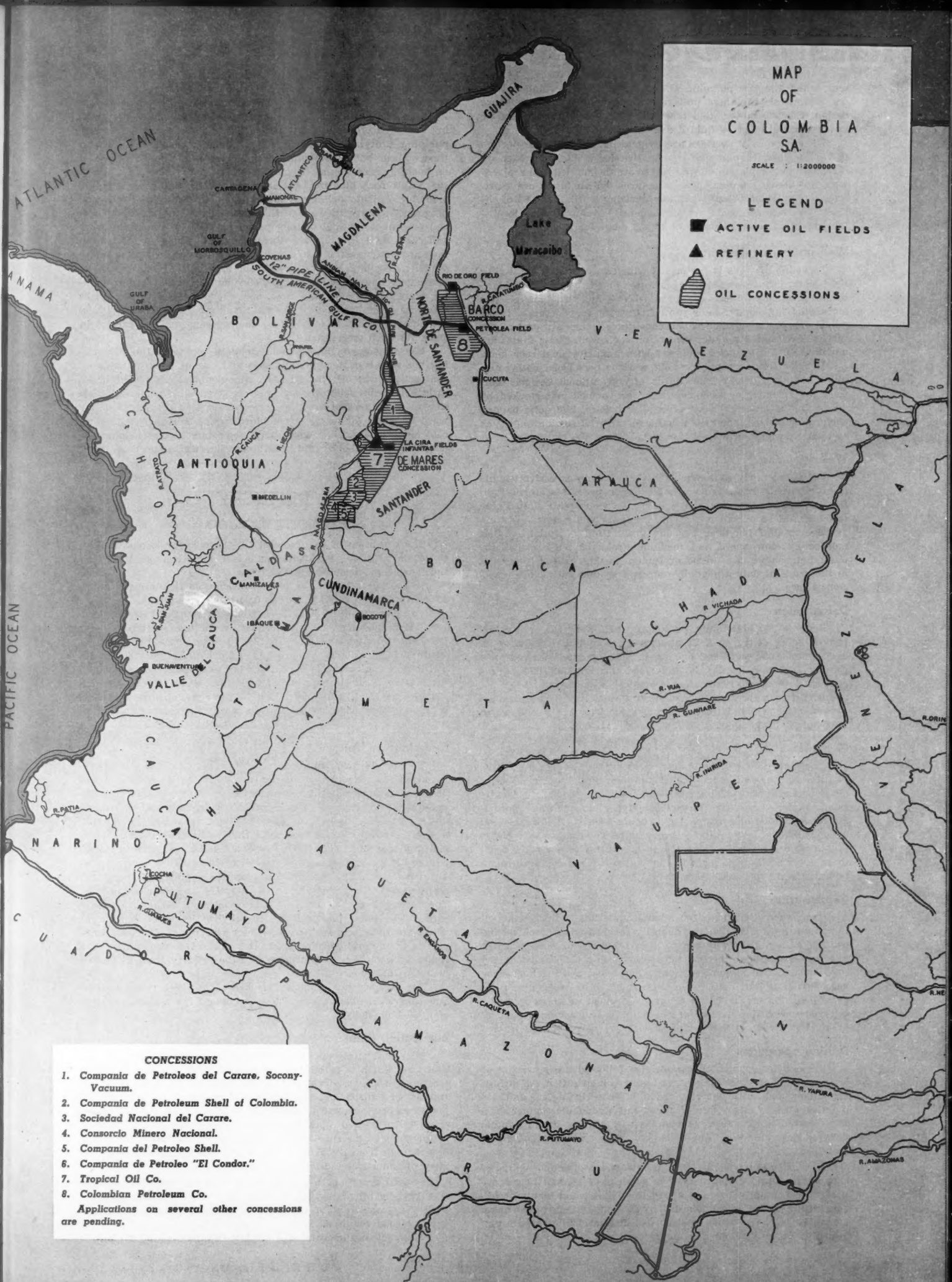
Well equipment

Average casing program as originally used on Infantas when field first started was around 120 feet of 16-inch to 21½-inch surface string, 11¾-inch oil string to top of zone, then 8⅝-inch liner through sand. This has been gradually reduced until now the general practice is 120 to 140 feet of 9⅝-inch surface pipe, and 6⅝-inch combination oil string with perforated section on bottom as liner.

Subsurface pumping equipment consists of 2-inch and 2½-inch external upset tubing, five-eighths and three-quarters inch sucker-rods, and various make pumps. Most widely used barrel is the tubing type with sectional liner and metal plunger, although a few fluid-seal units are used for dirtier, more troublesome wells and a few common barrels with cups for smaller or very clean wells.

The field is entirely electrified with power generated at a centrally-located plant in El Centro having 7,000 kw. total capacity. Power distribution is by 13,200-volt primary system, with transformation to 440 volts for secondary supply at points of consumption in field. Power characteristics are three-phase, 60-cycle, alternating current.

Surface pumping equipment consists essentially of individual units for wells, although there are two electric-powered catalinas operating 25 wells. Also there are some 27 additional wells with jacks which are operated by rod lines hooked by back-crank take-offs to individual units on nearby wells. Most of the individual units are twin-crank type with double-reduction gears and crank-counterbalances, although a few single-crank units in the lighter



CONCESSIONS

1. *Compania de Petroleos del Cararе, Socony-Vacuum.*
2. *Compania de Petroleum Shell of Colombia.*
3. *Sociedad Nacional del Carare.*
4. *Consorcio Minero Nacional.*
5. *Compania del Petroleo Shell.*
6. *Compania de Petroleo "El Condor."*
7. *Tropical Oil Co.*
8. *Colombian Petroleum Co.*

Applications on several other concessions are pending.

sizes are also used, as well as some 31 standard front type rigs with which the first pumping wells were originally equipped. Electric motors driving these units are predominantly of high-torque design. Electric power used for wells averages approximately 0.8 kw. per barrel of gross fluid lifted.

Several types of derricks are used, although the major portion is 87-foot standard pumping design. Heavier drilling derricks are used, but on completion of wells these are dismantled and replaced with the above pumping type structures, which latter are thereafter left over individual wells for servicing work. Some 60 of the shallower, lightest wells are permanently equipped with locally-fabricated gin-poles, A-frames or tripod derricks.

Well pulling equipment

Servicing of wells is performed with two classes of units. For light work, i.e., rod and tubing jobs, use is made of standard single-drum, jaw clutch hoists powered with 40-hp. or 60-hp. electric motors having compensator control. Current for operation is obtained off plug connection which constitutes a standard part of the service box pumping motor control on each well. These hoists are mounted on Ford trucks equipped with auxiliary dual rear ends.

Heavier servicing and cleanout work is performed with caterpillar mounted, double-drum hoists of conventional design. Tools used for cleanout or servicing work are owned and stocked by company and are comprised of regular bailers, hydraulic bailers, perforation cleaners, and the usual assortment of fishing tools such as spears, swages, wall-hooks, overshots, etc.

Well servicing

Sands are fairly well consolidated so that no excessive trouble is experienced from this source. Formation pressures are not sufficiently high to cause cutting of liners, therefore plain slotted pipe can be used rather than screens. Pumping wells now operating average around 100 bbls. per day gross fluid potential, so that moderately slow speed and medium stroke of units makes for minimum trouble due to rod or tubing parting. Sulfur is present in the crude at only a negligible amount so that subsurface corrosion is rare.

Dehydration

Some 30,000 bbls. daily, or roughly half the field production, is now being dehydrated. Treatment is through two centrally located plants, one large and one small. Both operate with complete gravity flow and heating is performed through old field boilers converted to direct fire-heaters. Chemical is added and then the emulsion is run through vacuum separators to free from entrained vapors, after which it passes through excelsior tanks and on to 1,500-bbl. settling tanks.

Gas plants

There are five gas plants now operating on the property, three in Infantas and two in La Cira. Compressor equipment consists of 51 low-pressure and 22 high-pressure units, all 180-hp., horizontal twin-cylinder, two-cycle, direct-drive type. At present approximately 50,000,000 feet of raw gas is being treated, yielding around 90,000 gallons gross gasoline recovery daily. The four smaller plants are booster type with mineral-seal absorbers, charged oil from these going back to the main El Centro plant for stripping through two standard type distillation units.

Repressuring

Gas return was started on a small scale late in 1928 although it was not until 1931 that the quantity reached an appreciable figure. Since then a daily return of from 17,000,000 to 28,000,000 feet has been maintained, the present average being 17,300,000 feet. Results are doubtful in some sections where close spacing makes for gas by-passing, but input to these areas has been stopped and the general results for field as a whole are deemed satisfactory. Regular type orifice flow meters are used for gas measurement on individual key wells, these equipped with seven-day blocks.

Drilling operations

Present development program, also followed during past two years, consists of six drilling crews in constant operation. All strings are rotary and sufficient rigs are used that rigging up and dismantling can be taken care of ahead and behind the regular drilling crews, allowing them to operate without lost time of actual drilling between wells. Ten to twelve wells are being completed monthly.

Rigs are steam-powered with drawworks, engine and pumps of conventional design. Heavy drilling derricks of 122-foot height are used with generally six lines string for drilling and eight for setting casing. Lines are standard 6 by 9, hemp-center, 1-inch diameter, plow steel type. One special point in local drilling well set-up which is different from general procedure in other fields is the pouring of pumping unit concrete base at time well is rigged up for drilling. Units used here are skid-mounted, so that a base roughly 5 feet wide by 14 feet in length and 2 feet thick is poured in the engine drawworks position of rig. Steel sub-bases for drilling engines have been fabricated locally and these are set on the pumping unit base, which practice obviates considerable rig-up time with no added cost since most of the wells have to be placed on beam immediately after completion.

A few rock bits are used in deeper wells, but general equipment for ordinary drilling is the two-way, three-way and four-way drag-type heads with welded-on blades. Formations are fairly soft and present no special drilling problems. Most of the wells make sufficient mud to maintain themselves after hole is started although a few cases of lost circulation are experienced periodically which necessitate hauling mud from local pit. Pressures can be adequately handled with straight clay mud so that use of weighting material has not been necessary except in a very few cases when field was first being opened. Fishing tools and other special equipment are owned outright by the company and are carried in stock for such emergencies.

Electric logging has become standard practice. Gun perforating has also become quite common and one of these units is on contract permanently in the field. Any doubtful edge wells or locations in unproven territory are completed with blank combination oil and liner string, then successively shot from bottom upward in stages for test. The combined use of both these rather recent innovations, i.e., gun-perforation and electric-logging, is deemed one of the largest factors contributing to speeding up of drilling work.

REFINERY

TROPICAL OIL CO.

The operation of the Tropical Oil Co. refinery located at Barranca Bermeja on the Magdalena River furnishes practically all the petroleum consumed in Colombia.

In the operation of the plant considerable flexibility is necessary in order to provide for transportation conditions.

The plant facilities have been gradually expanded and modernized in recent years. Selected crudes are brought to the refinery from the Infantas and La Cira field in a separate line from El Centro which is about 15 miles inland from the refinery. The main distillation equipment is a combination atmospheric and vacuum installation having a capacity of 4,000 bbls. daily. Operating with a 25-degree A.P.I. gravity crude a 25 per cent lubricating oil cut is taken overhead in the tower with an asphalt residuum remaining.

Combination Unit

This combination unit contributes to the flexibility of the refinery in that the two distillation divisions can be separated and operated as separate stills. Operated as separate atmospheric stills, one unit has a crude oil capacity of 7,500 bbls. daily and the second unit 5,500 bbls. daily. In this operation only the light products are recovered from the crude, the residuum being a commercial grade of fuel. This flexibility enables the company to secure a large output of gasoline and fuel oil when needed by the marketing department. The combination operation supplies all the stocks required for the manufacture of asphalts and lubricating oils. The straightrun gasoline is exceptionally high in octane rating. The plant has facilities to ethylize its gasoline to meet motor and aviation requirements. The refinery also absorbs a large part of the natural gasoline production of the Infantas and La Cira fields. This gasoline is transported to the refinery from El Centro in a separate line.

The refinery has a battery of shell stills which operate as an atmospheric distillation unit. This equipment has a rated capacity of 6,000 bbls. daily.

Lubricating Plant

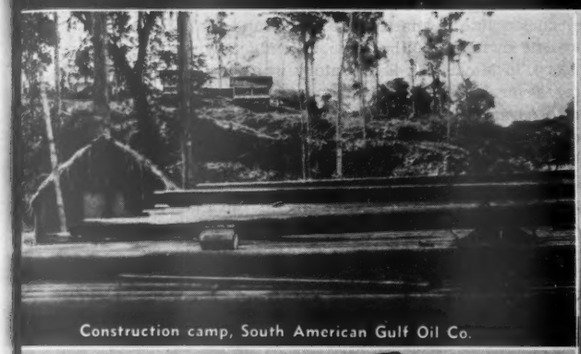
The lubricating stocks are treated in a phenol plant, the capacity of which is to be doubled in 1939. This solvent method of treating stocks was developed by the Imperial Oil, Ltd., in its refineries in Canada and the design and operation of the Tropical plant has been adapted to the stocks obtained from the Colombian crudes. The treated stock is rerun to secure cuts which are used for blending in the finished oils. The refinery manufactures motor oils ranging from S.A.E. 20 to 60. It also manufactures a wide variety of industrial lubricants and greases.

Several grades of asphalts, required in construction of highways and for other uses, are refined. The oxidation plant operates with the asphalt cut of the vacuum unit obtaining any penetration material required.

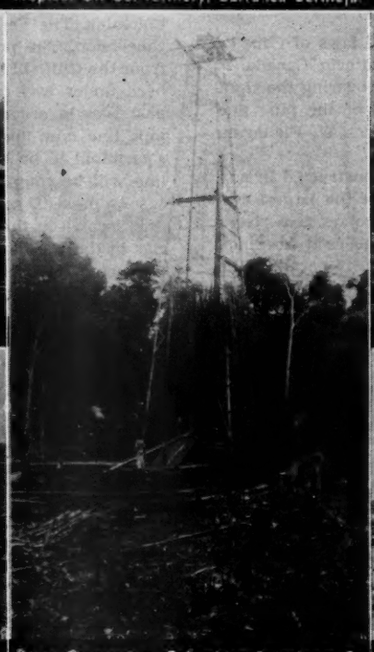
The company operates a small but complete canning plant in

COLOMBIAN, S. A., SCENES

Tropical Oil Co. refinery, Barranca Bermeja.



Construction camp, South American Gulf Oil Co.



Clean-out unit, Infantas field.

Barranca Nueva Pump Station, Andian National Corp. Ltd.

Barco Concession, Colombian Petroleum Co.

El Centro, Tropical Oil Co.

connection with the refinery. The usual sizes for lubricating oils are made and filled at the plant.

While most of the light-end products are moved in bulk, starting at the water terminal adjoining the refinery, it is necessary to supply some of the inland Colombian markets, in cans and cases. All kerosene is shipped in cans. Shipments of gasoline and asphalt are made in drums.

PIPE LINE

ANDIAN NATIONAL CORP., LTD.

The bulk of the crude oil produced in the Infantas and La Cira fields is transported to a terminal on Cartagena Bay in a 334½-mile pipe line system owned and operated by the Andian National Corp., Ltd., which is affiliated in management with Imperial Oil, Ltd. Approximately 6,500 bbls. of selected crude oils are transported in a small line from the fields to the refinery of the Tropical Oil Co. at Barranca Bermeja.

The Andian company, incorporated under the laws of Canada, maintains general executive offices in Toronto, Ontario, Canada. It holds a 50-year concession, which started in 1923, covering the right of way traversed by the pipe line. Construction of the pipe line started in 1925 under the direction of Capt. James W. Flanagan, president of the corporation.

The line was one of the most difficult ever constructed in any country, and when it was completed it was one of the largest two pipe line systems outside the United States. It crosses five rivers between the Mamonal terminal and El Centro, the field terminal, and most of the right of way is through swamps. It parallels the Magdalena River for a long distance and when that stream overflows, as it does during the rainy season, 70 per cent of the pipe line is under water. This situation made construction of the line a major engineering accomplishment. This unusual condition is an important factor in the operation and maintenance of the line.

The initial line was 10-inch and it was placed in operation in June, 1926. The first tanker was loaded at the Mamonal terminal July 2, 1926. Due to expanding production of the fields it was necessary almost immediately to increase the capacity of the line, and 285 miles of 10-inch loops were laid in 1927 and placed in operation that year. Twenty miles of 12-inch loops were laid the same year. With these loops the present daily capacity of the line is 53,000 bbls. at an average working pressure of 625 pounds. The system up to December 1 had transported 204,500,000 bbls. of crude oil from the fields to the terminal for export shipment.

As shown in the accompanying map the line extends from the Mamonal terminal on Cartagena Bay across the Savannas approximately 50 miles, from which point it follows the Magdalena River to the oil fields.

Station equipment

The nine stations on the line are equipped as follows:

El Centro station—Four 260-hp. Diesel engines directly connected to four duplex pumps (5½ by 24).

Galan and Barranca Nueva stations—Three 500-hp. Diesel engines directly connected to three triplex pumps (6¼ by 24).

Chingale, Puerto Mosquito, Costilla, Los Negrotos, Santa Ana and Plato stations—Two 500-hp. Diesel engines directly connected to triplex pumps (6¼ by 24). Two 200-hp. Diesel engines directly connected to duplex pumps (5½ by 24).

Mamonal terminal—Four 260-hp. Diesel engines directly connected to four Type M piston-pattern loading pumps (11⅛ by 24).

A loading berth is provided for mooring and loading tankers in Cartagena Bay, and an average loading rate of 9,000 to 10,000 bbls. per hour can be maintained.

Storage

The following storage is maintained at the terminal and stations:

Mamonal terminal—Fifteen 80,000-bbl. tanks.

Galan station—Two 60,000-bbl. tanks.

El Centro station—Three 80,000-bbl. tanks and three 55,000-bbl. tanks.

All other stations have two 30,000-bbl. tanks each.

All stations are equipped with generators, ice plants, domestic water systems with chlorinators, office building, warehouses, residences for families, bachelor quarters and dining halls. All these facilities are of modern construction. All stations, some of which are isolated from outside connections, have first-aid equipment, and two company doctors constantly travel the line to render medical care to employes. Victims of serious sickness or accident are transported to the company's hospital at the Mamonal terminal by airplane.

The company's main warehouse and shops are at Calamar on the Magdalena River. Its main office building is in the old walled city of Cartagena. Modern residences are provided for the staff in Bocagrande, a suburb of Cartagena, which is being developed by the company.

Owing to the unusual conditions in regard to soil and water it has been impossible to apply a permanent coating to the line. Extensive and continuous retreatment of the line is necessary, and this is an important item in maintenance costs. The retreatment averages about 35 miles yearly.

EXPLORATORY OPERATIONS

COLOMBIAN PETROLEUM CO. C.A.

The most important exploratory operation now under way is that of the Colombian Petroleum Co. C.A., which is jointly owned by the Texas Corp. and the Socony-Vacuum Oil Co., Inc. The concession is known as the Barco and consists of approximately 1,200,000 acres in one tract located in the central part of eastern Colombia. The Venezuelan line forms the eastern boundary of the concession. The present owners acquired the Colombian company from the Gulf Oil Corp. in May, 1937. Exploratory work, which has been under way for several years, has been speeded up over the past year in order to assure a supply of crude oil for the 12-inch pipe line now under construction connecting the concession with a terminal to be located at Covenas. It is expected that the pipe line will be completed the latter half of this year.

At present, several drilling rigs are operating in the Petrolea field located in the southern part of the Barco concession with two rigs in the Rio de Oro field at the northern end. Approximately 35 producing wells have been completed in the Petrolea field and the drilling program calls for the completion of several wells monthly this year. The proven area covers several thousand acres. Most of the completed wells are under 700 feet in depth with no wells reported deeper than 1,700 feet. Due to the shallow depths light drilling equipment is used and no special drilling or operating problems are reported. The rigs are Diesel powered. No pumping equipment has been installed. The initial ratings of the wells range from a few hundred to several thousand barrels daily. Late reports showed four tests completed as producers in the Rio de Oro field. Producing depths in this field range from 1,200 to 1,500 feet. Deeper wildcat tests are being drilled in the concession.

The main operating camp is located in the Petrolea field with a smaller camp at Rio de Oro. Most of the supplies and equipment for both camps and also the camps on the eastern end of the pipe line are transported by boat via Lake Maracaibo in Venezuela and the Catatumbo River and its tributaries. The main operating offices of the Colombian company are located at Cucuta, a Colombian city located about 40 miles south of the south edge of the concession. A railway out of Cucuta connects to the Petrolea transportation facilities of the Colombian company. The only connection to the Rio de Oro field is by boat. The company has completed an airplane landing field at Petrolea and is building a field at Rio de Oro. The Colombian and South American Gulf companies operate several planes which will use these landing fields in the transportation of personnel and supp'ies.

SOCONY-VACUUM OIL CO. OF COLOMBIA

The Socony-Vacuum Oil Co. of Columbia has exploratory drilling operations under way in its Restrepo concession of 120,000 acres located between the Paturia and Sogamoso Rivers in the Department of Santander. In connection with these operations, the company maintains a complete camp at Aguas Claras. A railway from Puerto Wilches on the Magdalena River to Las Bocas crosses part of the concession and the company has built a highway connecting Aguas Claras to the line. The camp also has an airplane field which is a landing point on a commercial line connecting to Bogota and Barranquilla.

Three tests have been drilled on the Las Monas anticline of the concession. One of these is reported to have been completed a small producer. On what is known as the Narino uplift, a fourth test is now drilling below 5,000 feet. This test has heavy drilling equipment. The company is preparing a second location in this section of the concession and has plans for additional drilling this year.

COMPANIA DE PETROLEO SHELL DE COLOMBIA

The Compania de Petroleo Shell de Colombia has two large concessions located in the same general area as the other large concessions of the upper Magdalena Valley. The company plans to have three drilling rigs in operation before the end of this year. The company has camps at Callejos and Cantimplora. The site of the first well is near Monteoscuro, about 22 miles from the Magdalena River.

ENGINEERING and OPERATING

In This Issue

DRILLING PRACTICES AND EQUIPMENT EMPLOYED IN THE K.M.A. FIELD

By D. H. Stormont ..... *Page 34*

During the relatively short period in which the K.M.A. field development has been going on there have been important changes in a number of the methods used in this area. Procedures resulting in faster drilling at lower costs are presented with comparisons between previous and present drilling costs and practices.

TYPES OF OIL METERS USED IN OPERATIONS OF THE INDUSTRY

By L. G. E. Bignell ..... *Page 39*

The demand for greater accuracy in the control of the various stages of production, transportation and refining has stimulated interest in means for metering oil. Devices for this purpose, employed by the industry, are reviewed with comments on features of design which are characteristic of each type.

SAFETY—COVERS PROVIDED FOR MOTOR TERMINALS ..... *Page 42*

In operations of the industry where men have become accustomed to the use of electric power, they sometimes overlook the importance of using safeguards provided by equipment manufacturers.

WILDCATS ENCOUNTER HAZARDS OF DEEP DRILLING IN NORMAN AREA

By Harry F. Simons ..... *Page 45*

In the campaign of exploration of the Norman area of Cleveland County, Oklahoma, drillers are confronted with the necessity of solving problems which come with trouble occurring in penetrating deeper horizons. An account is given of the experiences of drilling organizations operating in this section.

ARC WELDING OF CASING REQUIRES SPECIAL TOOLS AND METHODS

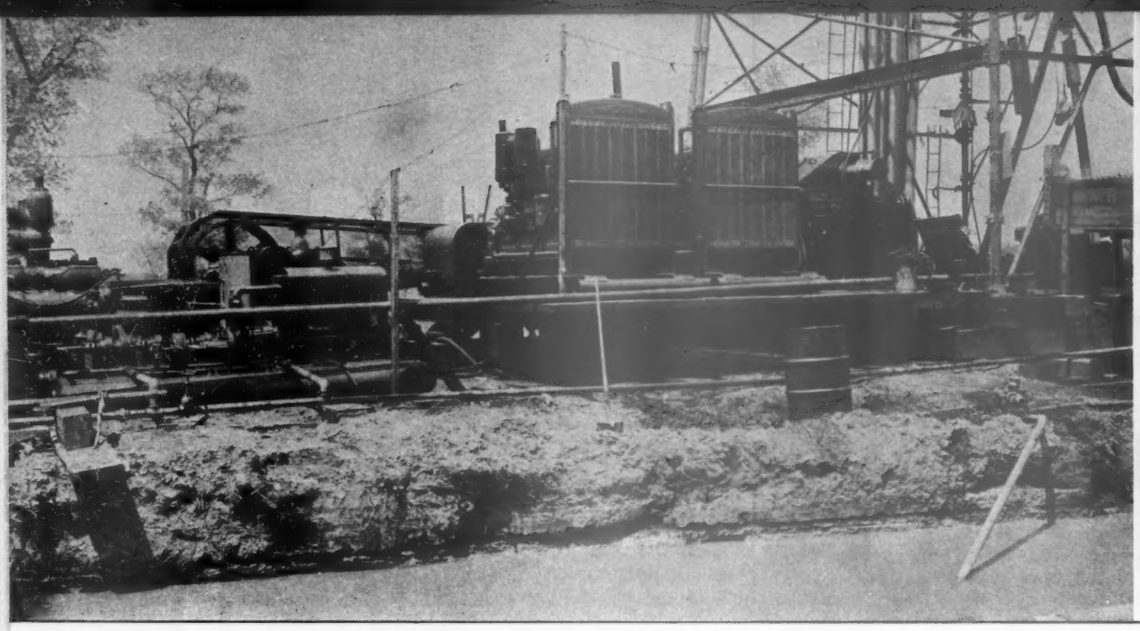
By G. M. Stearns ..... *Page 52*

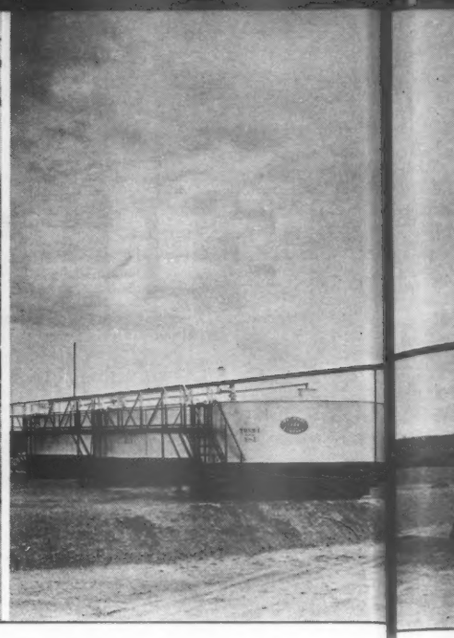
The introduction of welding technique for making up oil well casing has been accompanied by close study on the part of engineers who have given attention to the details affecting speed and efficiency. In this article a major company engineer discusses the advantages of welding casing and the methods he has found to be effective.

OPERATING IDEAS ..... *Page 36*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 54*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 56*





(Left) Typical Diesel-powered rig used in K.M.A. field. (Right) Battery of lease tanks

Drilling Practices in

By D. H. STORMONT

Faced with low daily allowables due to pipe line proration and the two-day shut downs, operators in the K.M.A. field of North Texas have devoted much study to drilling practices and methods of well completions in an attempt to complete wells at a minimum cost. Although the per well cost has been reduced largely through more rapid drilling time, as the drillers became better acquainted with the field, additional saving in well costs has been realized through more efficient completion methods.

At the first of this year costs of completing wells (in the tank) varied from $22,500 to $25,000 per well, depending upon the requirements and wishes of the operators and whether the producers were completed as flowing or pumping wells. Of this amount about $12,000 was expended in drilling to the pay and the remainder was required for pipe, drilling in with cable tools, shooting and cleaning out after shot, tankage, etc. Drilling to the casing point required from 15 to 20 days, and an additional 7 to 14 days were spent in drilling through the 200- to 250-foot pay section and cleaning out after shot. At that time operators were almost unanimous in their use of cable tools for drilling in and cleaning out.

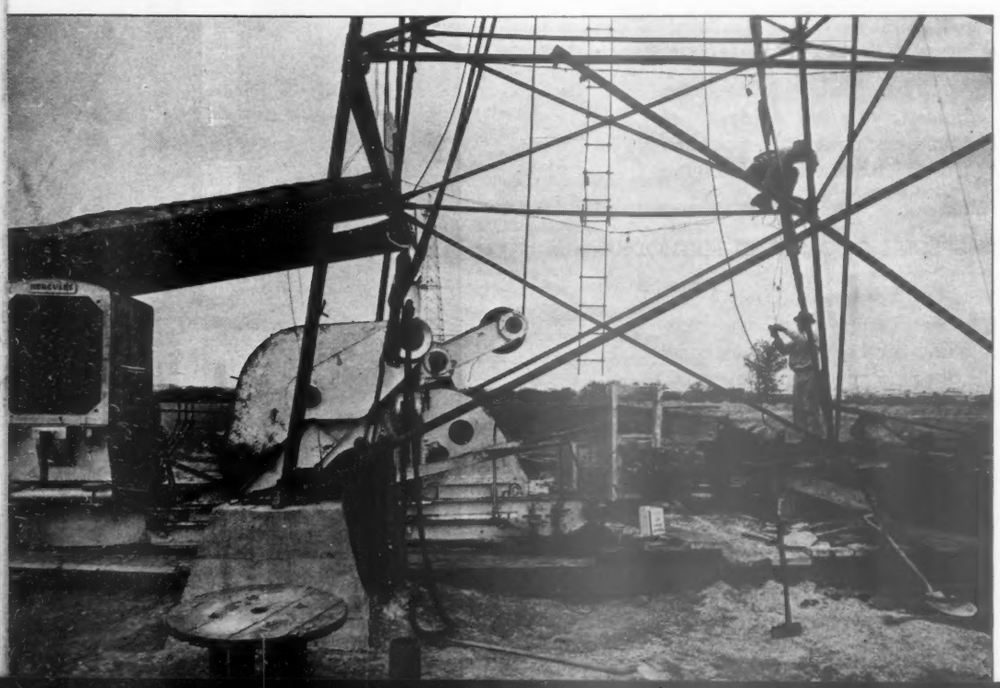
Now, through experience and knowledge gained from almost another year's operation in the field, total cost per well has been lowered to $18,000 to $20,000 completed in the tank with drilling contracts varying from $10,500 to $12,000 per well. The slightly lowered drilling cost was made possible through more rapid drilling time as most wells are now drilled to the casing point in 12 to 15 days. The remainder of the lower cost may be accounted for through improved completion methods and a better knowledge of the field's requirements.

Drilling to the top of the oolitic lime, encountered at 3,600 to 3,900 feet, offers no particular difficulties and savings made in drilling time to the casing point is accounted for largely through use of rigs better adapted to the field's requirements and short cuts made possible through experience. Early rigs in the field usually were powered by two 125-hp. engines, there being but comparatively few steam rigs used due to the lack of good boiler water. Most of the rigs now in use, however, are powered by two 225- to 250-hp. Diesel or gas engines and are more suitable for the 4,000-foot drilling. Early practice called for the use of fishtail bits in drilling from the seat of the surface pipe to the broken lime and shale section, occurring at 1,400 to 1,900 feet, but this has been discontinued and rock bits are used throughout the entire rotary hole. A 9½- or 10-pound mud is most commonly used and to minimize the harmful effect of the sharp sands encountered throughout the entire depth, comparatively rapid flushing rates are employed.

Use Cable and Rotary

After topping the oolitic lime some 10 or 12 feet of penetration is taken before cementing the 7-inch production string and cementing with 200 to 300 sacks of cement. To this point practices are fairly well established, but in drilling the 200- to 250-foot pay section and completing the wells operators differ widely in their opinion as to what is the best method. Since drilling in the pay zone requires considerably more time per foot than in the upper portion of the hole and costs several times more per foot, the matter of drilling-in and completing techniques is very important. And, as might be expected, there is much controversy over whether cable tools or rotaries are best for drilling through the producing section.

In the matter of completion costs, advantages and disadvantages of the two methods tend to offset one another so that overall costs are about the same. About 36 hours are required for drilling from the casing point to total depth using a rotary, whereas it takes from a week to 15 days for drilling-in with cable tools. Thus, while wells are usually on production several days earlier if a rotary is used, five men are required per tower to



Portable drilling-in unit of the kind used in the K.M.A. field

(Left) Elevated separator. (Right) Large power pump unit with rotary rig

K. M. A. Field

operate the rig while only two are needed with cable tools. Use of cable tools also permits release of the rotary, in which a much larger amount of money is invested, as soon as casing is set; thus, it is not kept idle during the 48 hours required for the cement to set. Also, since most K.M.A. wells are shot, cable tools must be rigged up for cleaning out anyway. However, some operators are now cleaning out with rotaries or using the Beckman reverse circulation process in place of cable tools.

Another advantage of using rotaries is that the section can be logged better than with cable tools, for, when the well begins to make oil, the cable tools bounce and the bailer cannot reach bottom. By using a rotary an accurate log can be made by catching samples and preparing drilling time charts.

Physical characteristics of the pay zone vary considerably from area to area in the field and a completion method suitable for either sand or lime must be used. Due to the lenticular nature of the sand, occurring with little or no regularity, each new well is more or less a wildcat with respect to the sand pay within the lime; while a sand pay may be present at a certain level in one producer, an offset may find it at a different level or not at all. Most wells, especially in the older part, encounter about 25 feet of oolitic lime (well saturated but very tight) at the top of the pay. This is followed by a shale break, some 120 feet of lime and then the lower sand. On the west side, the lower sand is usually very thick and replaces the lime. Due to this variance in the pay, amount of penetration varies from well to well but usual practice is not to drill too far into the lower level as salt water is present in some sections.

Perforate Lime Section

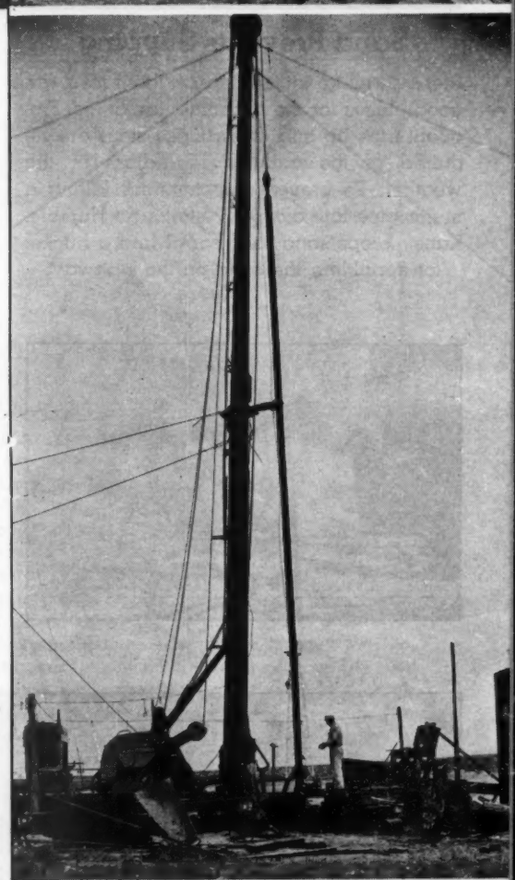
In completing wells in which the lime and sand pays are present, one operator has adopted a drilling-in and completion method that has proved to be highly successful and makes for high ultimate recoveries. With this method the procedure is to drill with rotary through the oolitic lime, through the shale break and into the sand. Seven-inch casing is set on top of the sand and cemented, thus putting the lime and shale break behind the casing. The lime section is then perforated with several shots and treated with 3,000 gallons of acid. This would usually result in a small flowing well of 150 to 300 bbls. daily from a section that would not have been recovered using the procedure followed by most operators in the field.

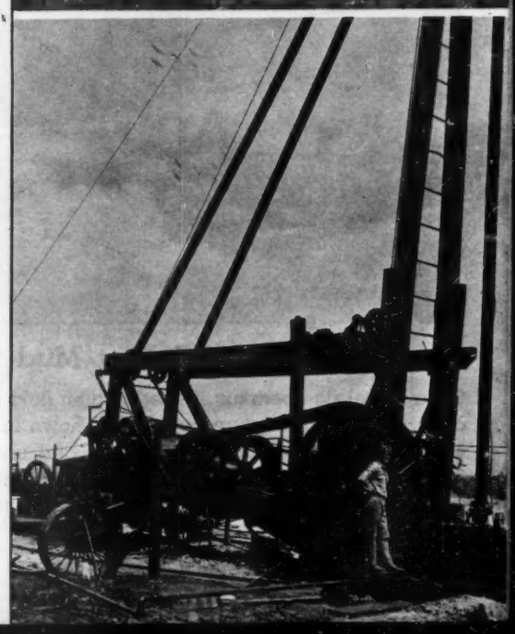
Following the setting of the seven-inch casing the rotary is moved off and cable tools set up for drilling into the sand pay. The plug is drilled out and a 6¼-inch hole cut to the desired depth in the sand, after which the sand section is given a small shot. Advantage of this method is that the shale is behind the casing, thus when the pressure begins to go down the shale will not give any trouble as it would in an open hole. Also any trouble with the shale coming in and sticking cable tools is eliminated by use of rotary. About one week is required for drilling in and an additional two days for cleaning out after the small shot, normally about 60 quarts.

Some experimenting has been done, using high-pressure gas for drilling in with rotary, but as yet it has been used on only a few wells. After the producing string is cemented a small rock bit is run, the hole is washed out and the well is drilled in with oil under pressure, jetting the gas into the oil. About 46 bbls. of oil per hour was circulated down 3-inch drill pipe and up through the annular space between pipe and casing. Intake gas was taken at a pressure of 180 to 300 pounds per square inch and compressed to a maximum of 650 pounds. This latter pressure was required to start circulation, but once established only an average pressure of 425 pounds was needed. Advantage of this method is that the large volume of gas used serves to lighten the oil column and increases its velocity, thereby loosening the cuttings in the hole and carrying them to the surface much faster.

Other operators use a 9½-pound mud throughout the entire section with no apparent loss in initial potential. However, each well is more or

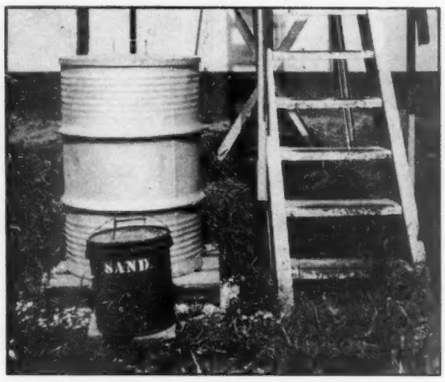
(Continued on Page 42)





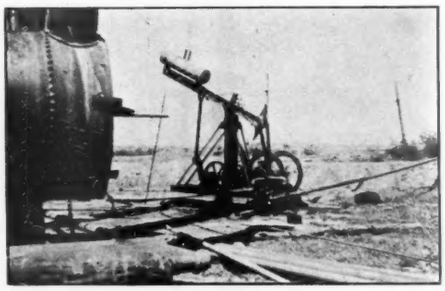
(Upper) Hoisting machine with spudder
(Lower) Portable spudder

OPERATING IDEAS



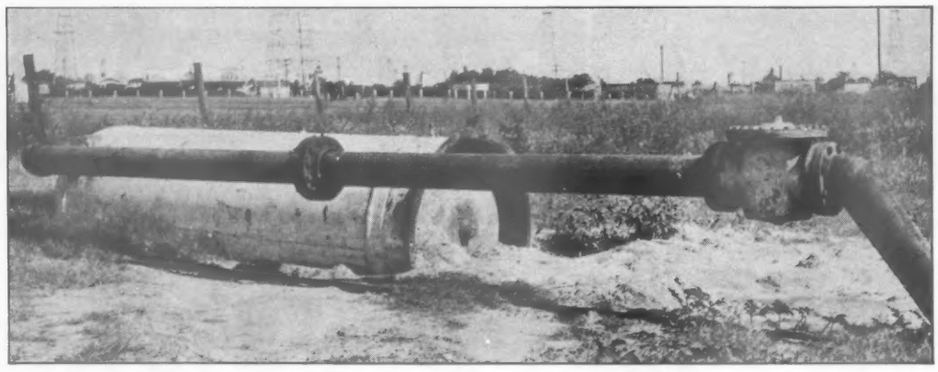
Sand Prevents Slipping

Steps leading to the top of the tanks are good places for the accumulation of ice. Frequent trips up and down these steps are required of the gaugers regardless of the weather. To prevent slipping and falling a major pipe line company station at Humble, Kans., keeps sand in a barrel and a bucket for sprinkling the sand on the stairway.



Separator Serves as Surge Chamber on Line to Flare

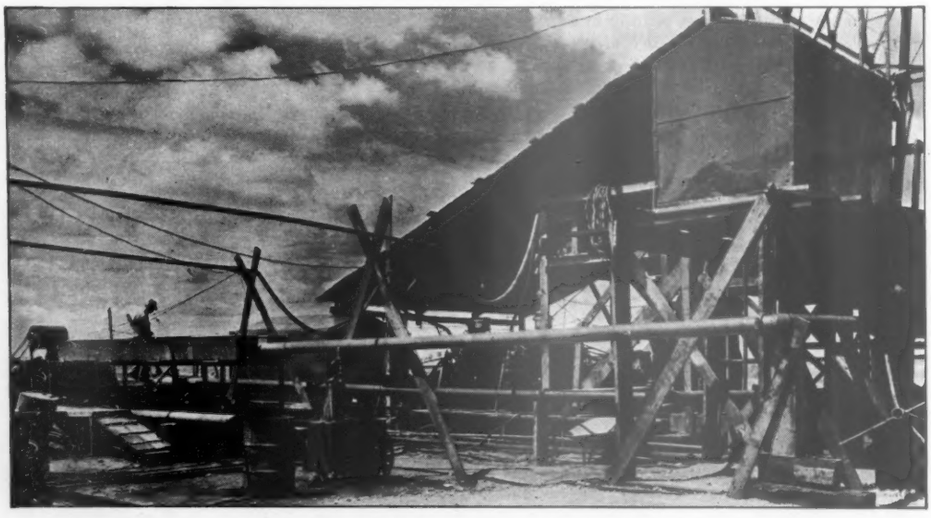
Space limitations made it necessary to pipe waste gas outside the congested limits of town-lot leases for disposal; therefore, a close watch had to be kept on the gas to prevent its flowing after the flare had been extinguished. A flow of raw gas constituted a fire hazard. To insure a steady flow to the flare, an old separator was connected to the 4-inch gas line to serve as a surge and expansion chamber, as well as a trap for any liquid which might be con-



densed from waste gas. A three-quarters inch pipe from the separator conducts gas to the pilot flare. Sufficient back pressure on the separator to insure steady flow through the three-quarters inch line was secured by adding weight to the flapper in the check valve, on the 4-inch outlet from the separator. With the check valve thus loaded, the tank carried an ample supply of gas to fuel the pilot light over periods longer than any anticipated temporary stoppage of flow to the 4-inch flare line; this feature has proved to be an important safety factor.

Furnish Own Water Supply

This operator did not want to lay a long line to supply water for his boilers on a wildcat test north of Oklahoma City. He drilled a water well back of his boilers, installed a jack and powered it with a horizontal gas engine. For water storage he made an earthen tank and water is pumped from the well into it. The boiler feed pump takes the water from the tank and puts it in the boiler. An extra pump is provided on the boiler manifold skid for transferring the water from the earthen tank to the derrick floor and mud ditch for requirements at these points.

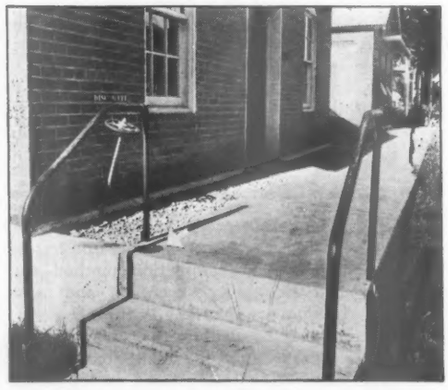


Efficient Mud Return Trough

On a Diesel rig operating in the Vacuum field of New Mexico one operator is using an efficient portable mud return trough. As shown in the accompanying photograph the trough is skid-mounted, of welded construction, and unitized with the shale shaker. It is mounted on 3-inch supports to place it high enough to connect with the mud return line. Portable steel mud pits are also used in order to eliminate loss of material to surface formations.

Warning at Steps

The white arrow points to a red disc painted on the concrete walk at the head of a short flight of steps. The red disc serves as a warning to men carrying material about the plant. Red discs for precautionary purposes are placed at stairways throughout this main line pumping station. At the wall of the building it may be observed that provision has been made for closing a discharge gate from the outside in time of emergency.

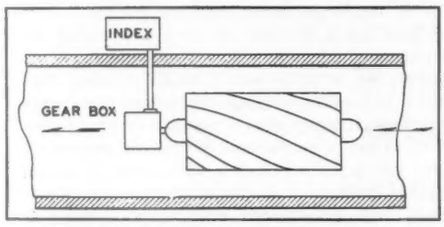


OIL METERS

By L. G. E. Bignell

MEN who handle crude oil and its products have long dreamed of measuring quantity by some mechanical device. Since the early days of the industry crude oil has been "gauged" in tanks while the finished product has been both gauged and measured into containers of known capacity. The gauging of fluid in tanks involves several operations into which the personal equation of the operators enters. The vessels must be strapped or calibrated which is done in a manner requiring care and accuracy on the part of the strapper. The measurement of the oil in the tank is also done by men who have to be careful to strictly follow the established rules and this introduces the personal equation factor which may cause errors. These facts have long been recognized by the men who buy and sell oil and for this reason much thought has been given to the development of mechanical devices which can be relied upon to measure the fluid and which are accurate and reliable enough to be used without check by manual methods.

Within the past few years much progress has been made in the development of oil meters



Free impeller type current meter

which can be grouped into two general types and classified as quantity meters or rate of flow meters and rate meters. The distinction between the two types may best be illustrated by using an automobile speedometer which rates (miles per hour) and the trip meter which rates quantity (miles). If the average rate and time are known the quantity can be calculated, or if the quantity and time are known the rate may be determined. The speedometer is in the same class as the rate of flow meter and the trip meter may be likened to the rate meter.

In the quantity fluid meter class there are two types, the positive meters and the inferential meters. In the first the flow is divided automatically into separate isolated parts equal by weight, or equal by volume, and these parts are tallied on an index or counter usually calibrated directly in volume or weight units.

In the inferential meter the flow is "inferred" from the action of the stream on the primary element of the meter and a knowledge of the physical laws governing the flow of the material through the device. Of this type, the current meter is the only one widely used with liquids. For many years this form of meter consisted merely of a propeller attached through a gear train to a counter. One of its earliest applications was for gauging the velocity of water flowing in rivers and streams.

Current meters may again be divided into two kinds, the free impeller type and the confined impeller type. In the first type the impeller is placed in the center of the cross sectional area of the conduit at which point the maximum velocity of the stream is attained.

In the confined impeller type the casing is so arranged that all of the liquid after passing through straightening vanes is forced through the impeller.

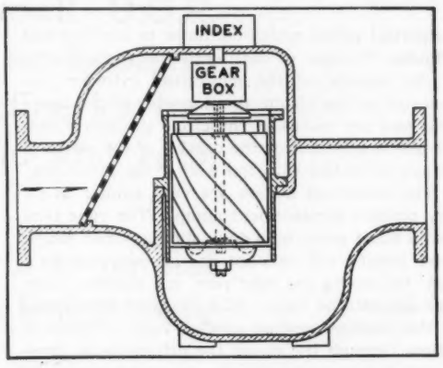
In general there are several reasons why the current meter in its present form is not entirely satisfactory for the measurement of crude oil containing sand. Its accuracy depends on rate of flow, viscosity and gravity, all of which are usually variable. The two latter variables are in turn dependent upon flowing temperature.

The majority of the quantity type meters are of the positive type, and may be classified into two groups depending upon the method of measurement, the weighing meters and the volume meters. The principles upon which these meters operate may be stated as follows: Suppose a quantity of liquid in a tank is to be measured. This tank is fitted with a tight spigot placed at the bottom. Another container that will hold the same quantity of liquid as the first tank is available. By using a one-gallon measure the liquid may be transferred from the first tank one gallon at a time and delivered into the second tank. The quantity of fluid measured is equal to the number of times the measure is filled from the first tank.

Weighing Type

The weighing type meter is based upon cycles which weighers operate and may be illustrated by the following example: A weigher usually consists of two tanks supported upon a knife edge beam and counter-balanced by weights. The liquid is weighed into one of the tanks through the diverting trough. When the gross weight of the liquid is sufficient the tank is tilted on the knife edge to a position which will permit the liquid to discharge through a syphon. This tilting causes the diverting trough to discharge liquid into the other tank which in time is filled and overbalances and spills its liquid. This cycle is repeated and as the gross weight of the liquid is known it is possible to estimate quantity by counting the number of movements.

There are four general classes into which all of the volume type meters fall and they may be enumerated as follows: The nutating disc, the oscillating piston, the rotary and the piston meters. The nutating disc meter is so called because it is built with a measuring chamber having top and bottom walls halved and formed like the inner surface of a sphere. The top and bottom surfaces are in the form of cones extending inward. The movable element is a nutating disc which consists of a central ball and the disc. which consists of a central ball and the disc. Due to the positive displacement cam or roller that rests against a shaft the disc portion must always be in tangential contact with both the upper and lower cones. Rotation of the disc is

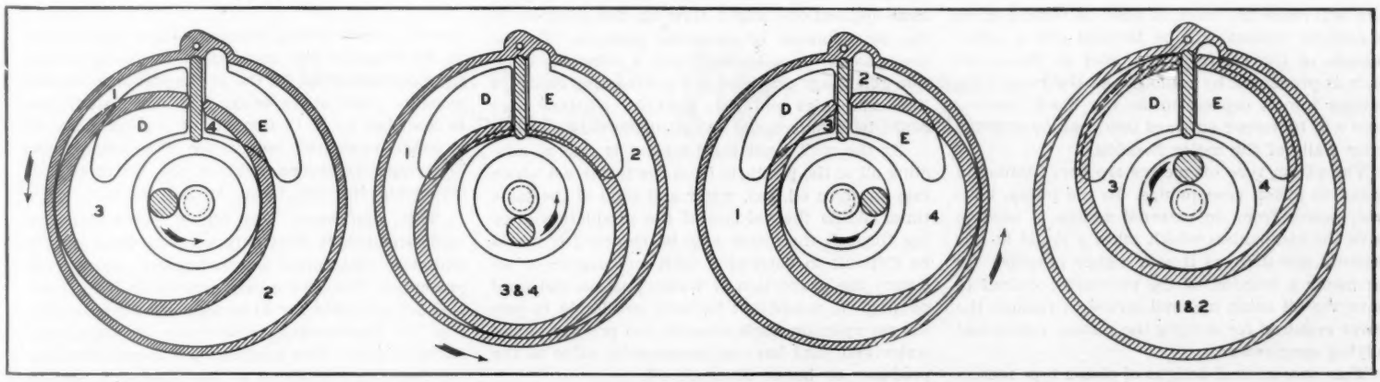


Confined impeller type current meter

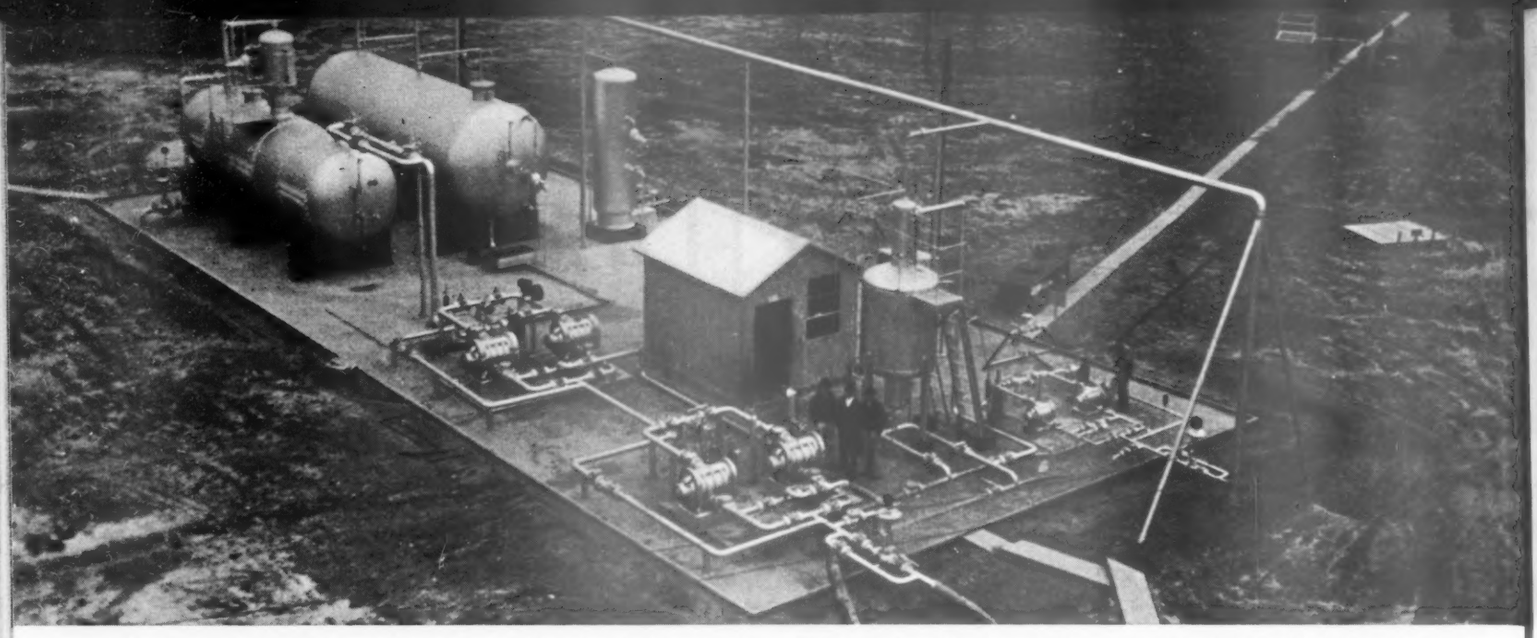
prevented by a diaphragm fastened between the top and bottom halves of the chamber and fitted through a slot in the disc. The inlet port is placed on one side of this diaphragm and the outlet on the other.

Oil enters the measuring chamber alternately on the top or bottom of the disc and must pass entirely around the cone before it can leave the outlet port placed on the other side of the diaphragm. Since the piston is always in contact with both of the cones, direct passage of the fluid from the inlet to outlet is prevented and a definite volume of liquid is delivered for each nutation of the disc. Nutation is defined as an oscillating motion like the nodding of a top or the motion of the earth's axis. This type meter is used extensively for the measurement of water and its accuracy requirements have been set by the American Water Works Association.

Another simple type of volume meter is the oscillating piston meter. This meter consists of a



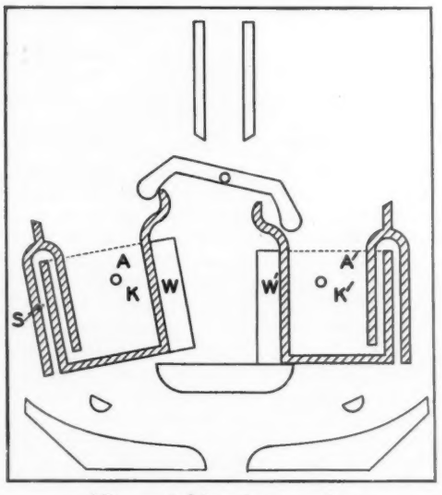
Oscillating piston type meters



Metering and calibration station near London, in East Texas where Hanlon Pipe Line Co. delivers gasoline to Humble Pipe Line Co.

cylindrical piston which oscillates in a cylindrical cylinder. Because of the relation of the diameter of the outside of the measuring cylinder, the diameter of the piston, the diameter of the inner ring, and the radius of the circle through which the piston must travel, the outside of the piston is always in contact with the wall of the inner ring.

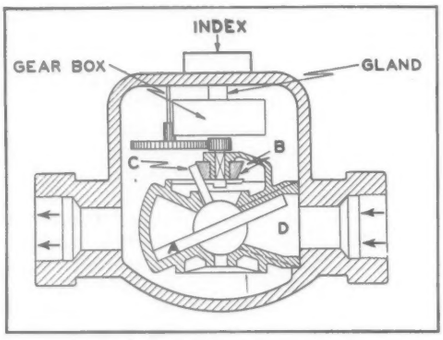
The rotary oil meters are very similar to rotary positive displacement pumps. The vane type uses a fixed rotor with four sliding vanes which move inward and outward and are actuated by a cam. Oil enters the inlet port and exerts a pressure against one vane which pressure is opposed by the pressure against another vane. If there is a flow through the meter the difference in pressure will cause the rotor to turn. A section of oil of definite volume will be isolated and a direct passage of the oil from the inlet to the outlet ports is prevented by a block. As the rotor vane recedes into a depression in the block another vane will be forced outward into contact with the inner walls of the meter housing.



The weighing type meter

The piston type oil meters are very similar in design to piston type pumps. In the pump, however, power from an external source is used to drive the mechanism which takes a liquid at low pressure and delivers it at a higher pressure. In the meter a fraction of the pressure required to move the oil being metered serves to furnish the power required for driving the piston, valves and tallying mechanism.

There are several designs of piston type meters different in moving and stationary parts but most of them are based upon the same general principle of a piston actuated valve which opens and closes ports. As the oil enters and leaves the chambers the volume is recorded as a number of movements of the piston and the chamber is calibrated so that the total volume of fluid to pass through the meter can be calculated. In some meters the valves are separate and in others they are integral parts of the pistons.



Nutating disc type meter

Meters have been used successfully in refineries, on pipe lines and in some instances on the leases. In the refineries meters have been used more as a guide to operation and as a means of controlling the different processes rather than as an accurate means of measurement.

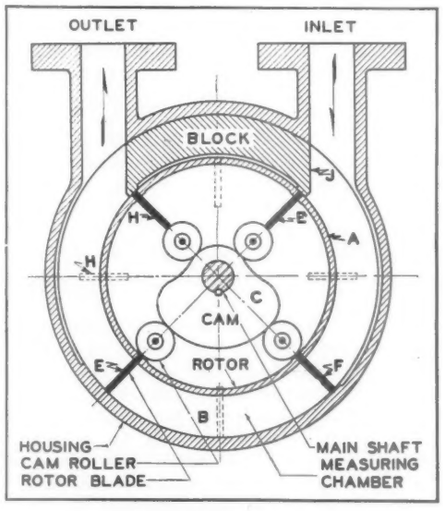
In the pipe line industry the pipe line engineers and the manufacturers have worked together in the development of devices for metering crude oil and much progress has been made. It is the consensus that meters should be installed only where the factors affecting their operation can be controlled. Otherwise, impractical applications might slow up the progress in the development of metering practice. To use meters with lease tanks is still a debatable question for many problems are confronting the pipe line companies and it is doubtful whether they could be economically installed for this purpose.

At the well head the problem is one of handling all of the products from the formation which may produce oil, gas, water and sand at the same time. While the volume of the production passing through the meter may be recorded it would be difficult to determine with any degree of accuracy the proportion of water, gas, oil and sand passing. It would not be very profitable to pay for gas upon the basis of cubic feet per barrel and water and sand have no commercial value to the producer or buyer of crude oil.

It has therefore been found necessary to settle the production from the well before the crude oil is metered and this usually involves the use of a lot of equipment other than the meters.

There are a number of very interesting installations of oil meters in refineries, at pipe line stations and at wells and a study of them indicates it is possible to adapt the meters to existing conditions. It is not always possible or practicable to try to use a mechanical device for measuring fluids but if the problem is left to the designing or plant engineer it is certain the best economic results will be attained whether the meter is used or not.

Many of the major oil companies are carrying on extensive experiments in the application of meters. Some vexing problems have been solved as for example the installation of liquid meters by the Continental Oil Co. at the stabilization and gasoline plant at Tepetate, La. This installation is described by E. O. Bennett, of that company, in a paper presented before the Petroleum Fluid Metering Conference held at the University of Oklahoma, Norman, Okla., April 7 and 8.



Rotary type meter

This conference was highly successful and well attended. It dealt only with the fluid meters and many interesting and instructive papers were presented. They have been printed in book form and are available for $1.50 each through the College of Engineering, University of Oklahoma, Norman, Okla. This conference was sponsored by the Petroleum Division of the American Society of Mechanical Engineers. Much of the data con-

Calling the roll

Midget poly plants shown successful
said ARCH L FOSTER *in National Petroleum News, August 10, 1938*

THAT was a story about two small U.O.P. catalytic poly units in operation at Leonard Refineries Inc and McClanahan Refineries Inc, in Michigan, boosting gasoline yield and raising octane number

Refiners read that story Here is a partial roll-call of those who are putting in U.O.P. poly units

Home Oil & Refining Co,	*Great Falls, Montana*
Johnson Oil Refining Co,	*Cleveland, Oklahoma*
Mohawk Petroleum Corp,	*Bakersfield, California*
Northwest Refining Co,	*Cut Bank, Montana*
Pennzoil Company,	*Oil City, Pennsylvania*
Quaker State Oil Refining Corp,	*Farmer's Valley, Pennsylvania*
Sunray Oil Company,	*Allen, Oklahoma*

Home Oil has completed its unit and is selling poly gasoline—and advertising it

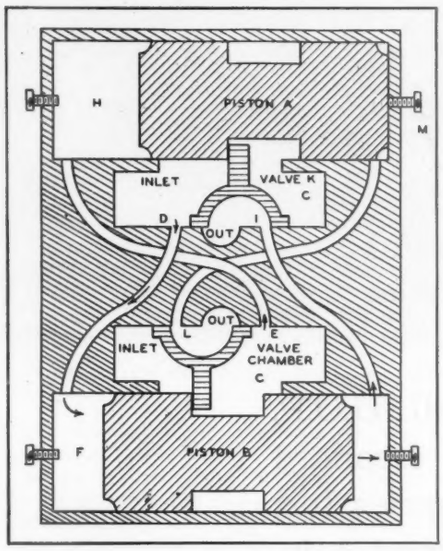
Do you want to know what Dubbscracking and catalytic polymerization will do for you?

It will cost you nothing to find out

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

tained in this article has been taken from papers presented and particular acknowledgement is made to Sylvan Cromer, University of Oklahoma. for the diagrams used in illustrating this article.



Piston meter

List of papers presented before the Petroleum Fluid Metering Conference, Norman, Okla., April 7 and 8, 1938:

"Petroleum Fluid Metering Conference." Opening remarks by W. H. Carson, University of Oklahoma.

"Viscosity and Its Effect on the Flow of Oil." J. W. Donnell, University of Oklahoma.

"Fundamental Principles of Head Meters." E. E. Ambrosius, University of Oklahoma.

"Fundamental Principles of Quantity Meters." Sylvan Cromer, University of Oklahoma.

"History and Growth of Pipe Line Transportation Systems." F. E. Warterfield, Jr., Oklahoma Pipe Line Company.

"The Use of Meters in Crude Oil Transportation Systems." William G. Heltzel, Stanolind Pipe Line Company.

"Displacement Type Liquid Meters." Frank Hadley, Sinclair Refining Co.

"Round Table Discussion." R. J. S. Pigott, acting chairman.

"Flow Nozzles." Howard S. Bean, National Bureau of Standards.

"Calibration of Positive-Displacement Oil Meters." R. E. Heithecker and W. B. Berwald, Bureau of Mines.

"Metering Crude Oil in the Burbank Field, Osage County, Oklahoma." S. I. Betzer, Phillips Petroleum Co.

"Measuring of Live Crudes Under High Pressures." E. O. Bennett, Continental Oil Co.

"Experimental Results Obtained in Metering Crude Oil Production." Boyd J. Smith and Burton Atkinson, Humble Oil and Refining Co.

"Measurement of Oil in a Refinery." J. J. Casey, Humble Oil and Refining Co.

"Application of Fluid Meters to Refinery Work." F. H. Rees and M. L. Cobb, Continental Oil Co.

"Summarization of the Proceedings of the Petroleum Fluid Metering Conference." R. J. S. Pigott, Gulf Research and Development Company.

"Summary of the Conference Pertaining to the Use of Pipe Line Meters." William G. Heltzel, Stanolind Pipe Line Company.

K.M.A. FIELD

(Continued from Page 35)

less a separate condition in K.M.A. so that results gained by one method cannot be compared with those of another.

Recently the reverse circulation process has been used with success for both drilling in and cleaning out after shot. This method, like the cable tool, allows the rotary to be released as soon as the pipe is set and, in addition, has several other advantages for drilling-in and cleanout work. Most important of these are: (1) Substantial reduction in clean-out and drilling-in time. (2) Accurate logging of formations penetrated. (3) Shot hole left in cleaner condition. (4) All advantages resulting from use of oil as a circulating medium in a closed system.

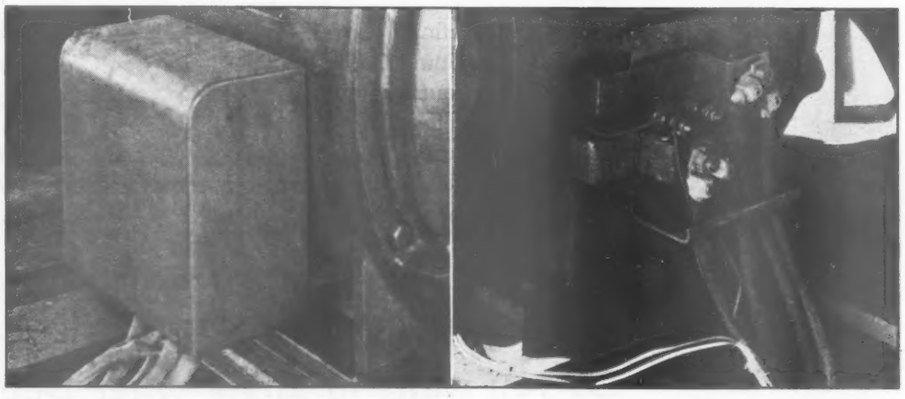
Accurate Logging

Drilling-in under pressure-control using oil as a circulating medium also has become fairly widespread in K.M.A. Since no high-pressure gas is encountered in this field the chief advantage from its use is that extremely accurate logging is facilitated. Also it permits recording the productivity of each foot of formation as it is drilled, and permits the well to start flowing at a controlled rate the moment the pay zone is penetrated.

Need for completion methods conducive to low gas-oil ratios is shown by the comparatively rapid decline in reservoir pressure. Latest Railroad Commission tests show the average bottomhole pressure for 55 key wells is 1,178.7 pounds per square inch, representing an average decline of 82 pounds since the first survey was made early this year. The first tests, run in January, February and March of this year on 48 key wells, revealed an average pressure of 1,260 pounds per square inch. The next survey was run in May, the average for 51 key wells being 1,210.8 pounds. This represented an average drop of .6 pound pressure per 1,000 bbls. allowable produced during that period.

The most recent tests, run during the past three months, reveal that the average pressure declined 32 pounds between that time and the earlier test. Of the 55 wells tested, 38 showed a decline in pressure, seven showed an increase (due to repressuring operations) and 10 were wells on which no previous pressures had been taken. The average drop for the 45 wells was .498 pound per day.

SAFETY — Covers Provided for Motor Terminals



Drilling rigs are using more and more electrical machinery, particularly since the introduction of practice of generating the current on the job. Roughnecks and drillers have become familiar enough with this type equipment to lose their respect and fear of high voltage and high amperage. They are becoming a little careless as is evidenced by the photographs above of two motors on a drilling rig.

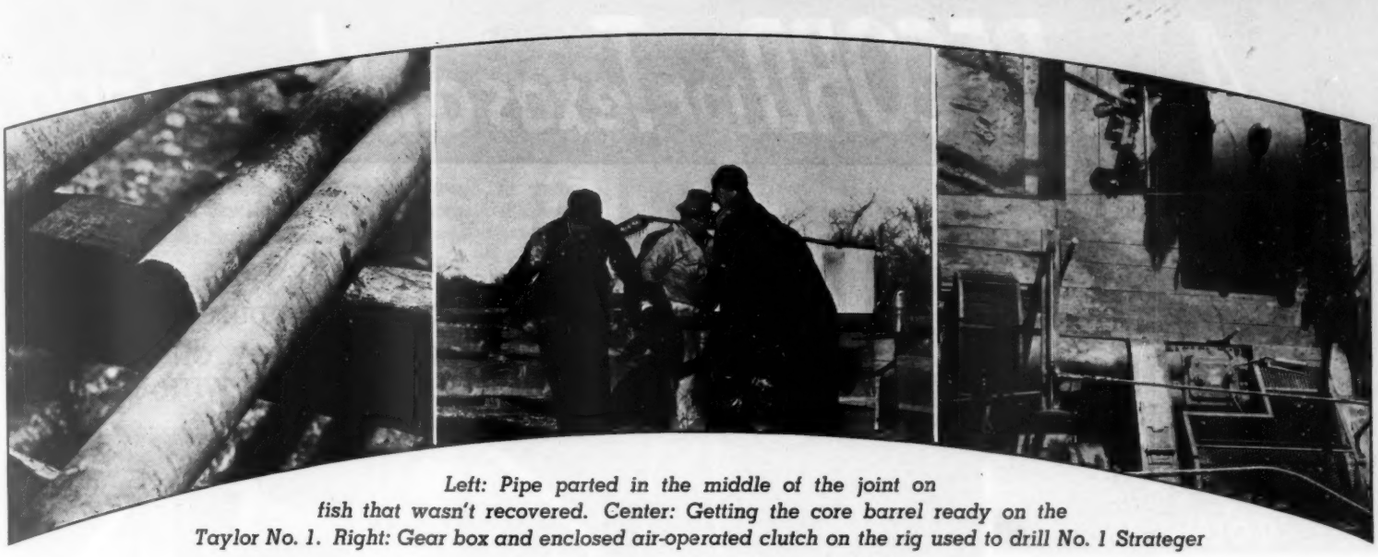
The terminal safety cover is in place on the pump motor but the 350 hp. motor that drives the drawworks has its terminals uncovered. Part of the floor is missing and it would be a very easy thing for a man to lose his balance and fall against the terminals; or a metal object carried by a workman could come in contact with the posts and short circuit the current in the lines through his body. The well-known horse-play around a rig could very easily result in a fatal electrical burn due to a workman being shoved against the motor.

In the past seven years, 18 men have been killed in the oil industry by burns suffered from electricity. Nine such accidents occurred in 1937. With the increase in the number of electrical installations on drilling operations, another hazard is added if the men are not informed as to the results of carelessness around this type of power.

Transmission lines on the rig at which the above photos were taken carry 350 volts and from 625 to 1,000 amps. Under most circumstances this is sufficient to kill the average man and leaving the motor terminals exposed provides a constant hazard which will in time take the life of some member of the drilling crew.

A welder was killed recently when his lamp cord, carrying 24 volts, shorted while he was inside a boiler repairing the tubes. A truck driver met his doom when his winch-line broke and came in contact with a line carrying 2,500 volts.

The hazard shown above could easily be eliminated as the cover for the terminals is probably laying around the rig. If not, the men need only report its absence to the contractor and he will provide a new one. The manufacturer of the motor realized the importance of this cover or he wouldn't have installed it originally.



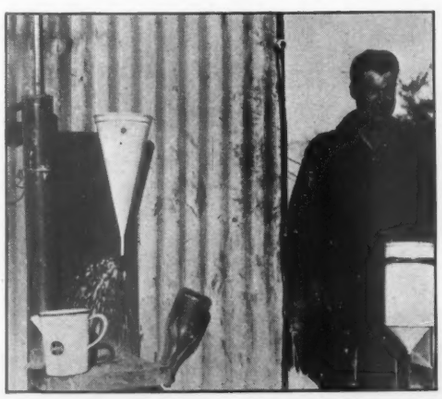
Left: Pipe parted in the middle of the joint on fish that wasn't recovered. Center: Getting the core barrel ready on the Taylor No. 1. Right: Gear box and enclosed air-operated clutch on the rig used to drill No. 1 Strateger

Wildcats in Norman Area Encounter New Problems

By HARRY F. SIMONS

The recent outburst of wildcat drilling in Cleveland County, Oklahoma, near Norman, has demonstrated that the hazard of deeper drilling still confronts the oil producer and contractor. One well, the Guy Hannum and Big Chief Drilling Co. No. 1 Strateger, NW NW SW of Section 25-9n-2w, was abandoned after major drilling difficulties; two of the others have reached pay depths and have obtained no satisfactory production, while the third is now drilling below 5,000 feet and will soon get to the stage where any hole difficulties may become serious.

Interest in this area was heightened late in the summer with the completion by Delaney and others of their No. 1 Bugher, in SE SE SW of Section 12-7n-2w, at a plug-back depth of 7,672 feet. The well made 200 bbls. of oil and 1,500 bbls. of water on test. The area has attracted attention since the discovery of the Oklahoma City pool, and in June, 1935, the Moore pool was opened by the completion of the Sinclair Prairie and others No. 1 Franklin, SE NW SE of Section 21-10n-2w, with a potential of 35,274 bbls. from the second Wilcox sand at 7,280 feet. The well was good for 75,000,000 feet of gas. The Anderson-Prichard No. 1 State, SW SW SE of Section 16-10-2w, made nearly 300,000,000 feet daily and some oil and distillate when it was completed late in September, 1936. Most of the wells drilled in the Moore area required heavy production equipment because of the huge gas volume. Completions were spectacles which attracted large crowds.



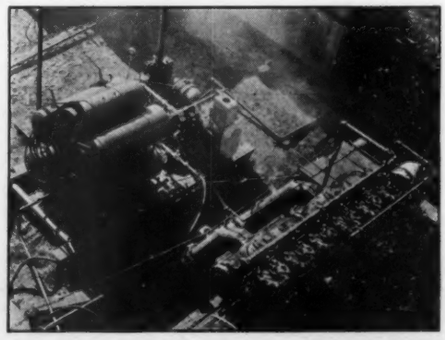
Part of the equipment used for testing the mud on the No. 1 Taylor

Majors Interested

Discovery of the Moore field led to further geological and geophysical prospecting in Cleveland County, and most of the area has been worked repeatedly; several blocks have been assembled by the major companies. The No. 1 Strateger was on a farm-out by Gulf Oil Corp. and was just east of a large Carter Oil Co. spread. Gulf Oil Corp. No. 1 Taylor, in the SE SE SW of Section 1-7n-2w, is a mile north of the Bugher well; at present it appears a failure in its attempt for Wilcox production, as it has been plugged back from 7,676 to 6,955 feet. Gulf Production Co. and Nels Burton's No. 1 Norman, in the NW NE of Section 17-9n-2w, reached a total depth of 7,695 feet after setting 7,661 feet of 7-inch pipe. After being shut down several times, it is now trying to obtain production by gun-perforating the pipe from 7,655 to 7,660 feet. Harper & Turner started work on their No. 1 Taylor, in SE NE NW of Section 23-8n-2w, last month.

The usual troubles that beset drilling crews are greatly aggravated by depth. Progress of Strateger No. 1 was quite rapid, and only minor troubles were encountered up to the time the drill pipe parted and attempts to get over it failed. Rigging up of the large Diesel-mechanical rig for drilling of the test started on September 16. Prime movers for the rig consisted of two Model 35HD 10, six-cylinder, two-cycle, 225-hp. Fairbanks-Morse Diesel engines. The engines are mounted on heavy steel skids, set end to end, and connected through a gear box. Two sprockets are provided for pump drives, but only one Gardner-Denver FQ 2000 pump was used. This pump has a rating of 200 hp. at 50 s.p.m. and is capable of accommodating from 6- to 7¾-inch liners. Drive of the large three-shaft, four-speed drawworks is through a Sheldon Type R reduction gear and an air-driven reversible clutch, both completely enclosed. The two Diesel motors are started by compressed air furnished by a small Diesel motor driven compressor which also drives the water pump and the electrical generator for

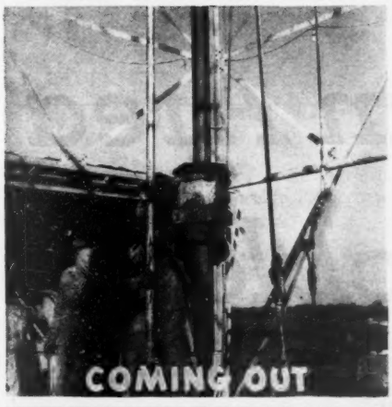
(Continued on Page 48)



View from above of large Diesel engine, air compressor and air tanks

A new RECORD for Texas and Louisiana

GOING IN



COMING OUT

13,621 FEET

(depth as we go to press)

on UNION PRODUCING COMPANY'S MINNIE BROWN NO. 1 AT AGUA DULCE, TEXAS.

BELOW: 100% RECOVERY ON THE WORLD'S DEEPEST WIRE LINE CORE WITH REED'S B-R.

A new WORLD'S RECORD with

REED'S B-R WIRE LINE CORING-DRILLING OUTFIT

WHICH WAS USED EXCLUSIVELY FROM 10,882 FEET TO PRESENT DEPTH

Last core taken as we go to press was from 13,610 feet to 13,615 feet; with 100% recovery

Drilling through the thickest section of heaving shale and sandy shale ever encountered, a bit that would give maximum footage was necessary.

The REED B-R averaged more than 250 hours per bit on bottom, the majority being pulled "Green"

REED B-R DRILL COLLAR AND 3-BLADE DRILLING BIT WITH CORE BARREL IN POSITION

The Cutter Head . . Tested and Proved to Cut Clean Cores Through the Hard Formation Rock Bit Shown

REED B-R HARD FORMATION BIT

REED ROLLER BIT COMPANY

the light system. Five volume tanks are provided for air storage. Electric current for driving the vibrating screen is manufactured by a generator driven by a pulley at the front of the pump motor. A transverse, roller-bearing, six-sheave crown and a five-sheave, roller-bearing traveling block were used for drilling the test. All of the connections and incidental equipment were of extra heavy design.

A 9-inch hole was started at 785 feet after 750 feet of 10¾-inch casing had been set and cemented with 250 sacks of cement. A new string of 4½-inch drill pipe was put in use and only minor difficulties were encountered. After topping the Checkerboard lime at 5,515 feet, the drillers began conditioning the mud and brought it up to a weight of 10.1 and a viscosity of 42. From two to eight sacks of artificial mud were added daily to maintain the required weight and viscosity.

Lost Mud Circulation

On reaching a depth of 6,969 feet returns of the circulating fluid began to diminish and finally stopped for four hours. Besides the fluid in the pits, another pit of mud was mixed and pumped into hole before circulation was regained. Four days later the trouble started in earnest. While drilling at 7,179 feet the drill pipe parted. On coming out of the hole, the driller discovered that 24 joints of drill pipe, a 30-foot drill collar, the reamer and bit were in the hole. The pipe had twisted off in the middle of a joint, but no trouble was anticipated in catching the fish. After several attempts with the overshot failed, a dog-legged joint was run in the hole with no results. The top of the fish was at 6,329 feet and the log showed shale from 6,167 to 6,485 feet; the cavity was not only wide but had possibilities of being a long one. Attempts to catch the pipe with a wall-hook also failed. At points below the top of the fish, and with the wall-hook in extended position, nothing was encountered. A knuckle-joint was added to the wall-hook on the next attempt but no results were obtained with it. The fishing string was run 50 feet past the top of the fish before anything was encountered but efforts to catch the fish by doing this and then raising the pipe preparatory to getting over, also failed. Sidetracking the fish appeared to be the best method of finishing the hole. This was a bitter pill as all of the hole that occasioned trouble was below this depth. The hardest drilling had been encountered at 6,825 feet, a hard chert, slightly quartzitic, had been encountered and this required four bits to drill 7 feet. Cutting time for this section varied from 1 to 3 feet per tour.

For the sidetracking, the hole was cemented back to the top of the fish and the cement allowed to set for five days. The drill pipe was then run into the hole to see there were no obstructions. After reaching bottom the hole was conditioned for 24 hours. The hole was then surveyed with an Eastman survey instrument to determine existing deviation and direction of the upper hole. As the upper hole had been drilled in a careful manner, deviation was slight, being only 1.5 degrees; direction of deviation was approximately 10 degrees east of north.

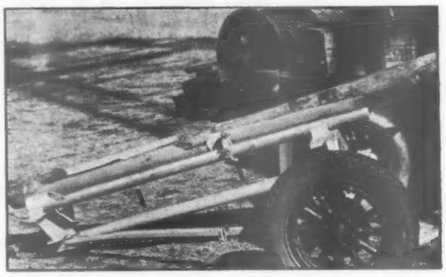
The hole was then conditioned for 36 hours preparatory to setting the retractable whipstock. This was done to insure that there would be no difficulties when the attempt was made to run and set the sidetracking tool. The whipstock was set at 90 degrees from the angle of deviation as it was believed that kicking the hole in this direction would prevent encountering the fish in the hole.

Fishing Job

The whipstock was reset several times in an effort to get by the fish and 12 days after starting to sidetrack, the hole had been redrilled to 6,540 feet. The drill pipe stuck once but it was loosened and drilling continued until another twist-off occurred which left four joints of drill pipe in the hole. Drillers had no better luck getting over this fish than they had with the first one. After fishing several days with no results, operators determined to abandon the job as it was very doubtful if a second sidetracking job would have much chance for success.

The Gulf Oil Corp. No. 1 Taylor did not encounter any serious difficulty while drilling although a tendency to lose mud was noted after passing the Checkerboard lime. Mud maintenance was checked closely for weight, viscosity, sand content, and gas cutting. A mud thief was used for obtaining samples from various depths in the circulating and reserve pits.

A great aid in conditioning the mud was the large L-shaped reserve pit equipped with a 7-inch return line that had an adjustable connection which permitted selection of the proper make-up mud to be added to the circulating pits. New



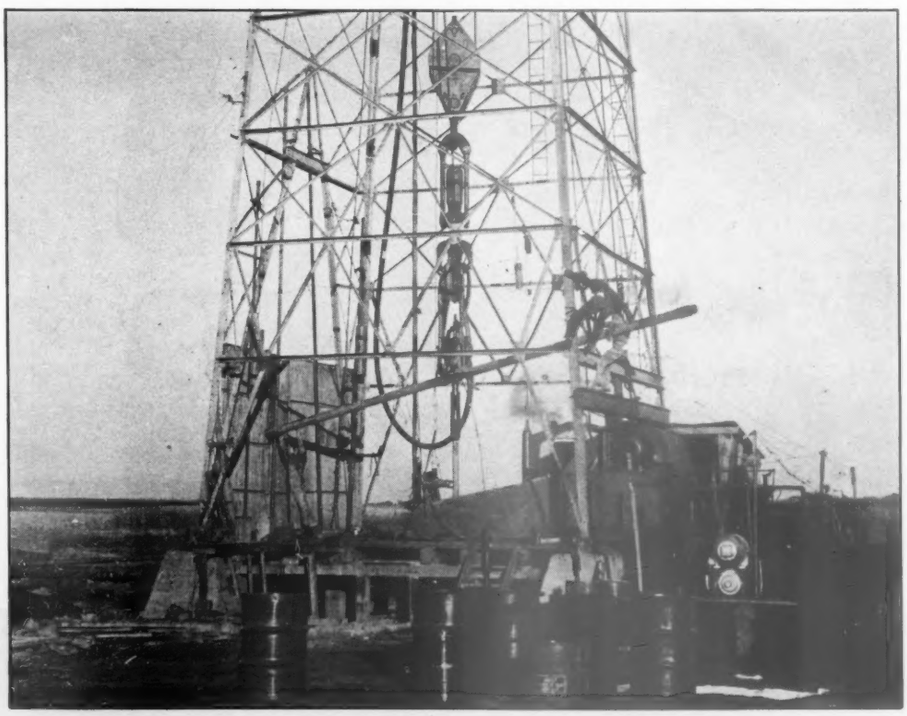
Retractable whipstock brought to the well on special built trailer

mud could be added by directing the 7-inch stream into the suction pit or into the circulating fluid immediately after it passed the vibrating screen. The latter method allows for a gradual raising or lowering of the mud qualities as it permits a better mixture of the two fluids before the pump picks it up. A shed was provided for a mud laboratory and as a store room for the large quantity of fibered, weighting and colloidal materials used.

A large Diesel-electric rig was brought from the deep Fox pool after completing an 8,000-foot well there. Two Allis-Chalmers generators, one 350 volts and 428 amps. and the other 350 volts and 686 amps., are driven through V-belts by two eight-cylinder, four-cycle, 275-hp. Atlas Imperial Diesel engines. Governed speed of the engines is 516 r.p.m. and the generators are rated at 1,200 r.p.m.

Starting Equipment

The exciters for the generators are 25 kw., 125 volts, 200 amps. at 1,750 r.p.m. The generators are mounted on a continuous shaft but the exciters form small separate units. For starting the Diesel engines a separate unit consisting of a 45-hp. Waukesha engine and a 25 kw. generator is used for generating current and the terminals are changed on the exciters so as to make motors of them. The engine clutches are then engaged for cranking. The generator on the starting unit is interchangeable with the exciting generators in case one of them should fail. Current for the vibrating screen lights and blower motors is taken from the exciters. The generators and shaft are mounted on skids made from 14- by 14-inch I-beams and the unit weighs 50,000 pounds. The Diesel engines, mounted on similar skids, weigh 52,000 pounds each. Fuel consumption of the large engines is in the neighborhood of 90 gallons per eight-hour tour under normal operating conditions. The engines are equipped with Dodge clutches, Vortex air-cleaners and a safety indicator which turns on a light and rings a bell whenever the temperature gets excessively high or the oil pressure drops dangerously low. The generating machinery is located in a metal framed, sheet iron building and cables carrying current to the rig are enclosed in a heavy wooden conduit. The switchboard, located in the engine house, provides for wide latitude in the control of the distribution of the current. Under ordinary drilling conditions the current from the larger generator goes to the pump motors and current



Taking down the rigging-up pipe preparatory to boxing in the derrick

"Little-BIG" RIG

★ ★ FOR SHALLOW AND MEDIUM DEPTH DRILLING

Fig. 1—Series TDL, Model G, Rig with guards and covers removed.

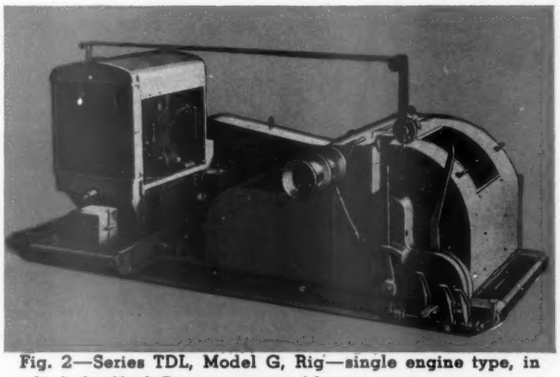


Fig. 2—Series TDL, Model G, Rig—single engine type, in which the Slush Pump is powered by a separate engine.

Here is the sensational new Bridgeport Series TDL, Model G, Mechanical Rotary Drilling Rig.

This Rig incorporating the new Gumbo Buster FC-200 Unit Draw Works, is especially designed for quick moves and rapid assembly, yet retains the flexibility, operating conveniences and many other features of larger, more expensive rigs.

One or more engines furnish power. Reversing mechanism is incorporated in the Draw Works. Four speeds, any one of which can be changed instantly by merely changing the position of a single operating lever, can be imparted to the Drum, Rotary and Cathead without varying the speed of the engines. New triple compounded brake with tremendous leverage assures positive load control.

Every outstanding feature of this new Rig, including comparatively low first cost, commends it for use in localities where drilling speed, and quick moves are essential considerations.

PHONE, WIRE OR WRITE

for specifications, prices, terms of sale, etc. . . . . These Rigs are ready for delivery now.

BRIDGEPORT

THE BRIDGEPORT MACHINE COMPANY Factory and General Offices, Wichita, Kansas

HOUSTON L. U. 203 Local "Cap" 1301

DALLAS L. U. 584 Local 2-4282

SAN ANTONIO L. U. 219 Local "Gar" 5671

CORPUS CHRISTI L. U. 31 Local 574

ODESSA L. U. 683 Local 684

FORT WORTH Local and L. U. 3-3506

SHREVEPORT L. U. 15 Local 6681

CENTRALIA, ILL. Local and L. U. 589

TULSA L. U. 661 Local 5-3204

OKLAHOMA CITY L. U. 795 Local 7-2725

BARTLESVILLE Local and L. U. 3410

WICHITA L. U. 59 and 116 Local 2-1431 and 2-1432

AND BRANCH STORES

from the smaller generator goes to the hoist-motor. Through a hammer switch, the current to the pump is switched to the drawworks motor whenever heavy hoisting is in prospect. It is also possible to direct the current from the larger generator to the hoist and the smaller generator's output to the pumps. The switchboard also includes a constant voltage regulator which automatically adjusts the fields to current requirements.

An Emsco drawworks, with three 7-inch shafts, is used for hoisting the drill pipe. It is driven by a 400-hp., 350-volt motor through a Falk-Herringbone speed reducer with a ratio of 10 to 3.28. The electric motor is rated at 1,000 r.p.m. with a continuous amperage of 625. It is equipped with a 2-hp. motor to drive a cooling fan. Two 18-inch Lucey power pumps are included with the rig. One can be used for circulating the drilling fluid while the other can be used for standby and for mixing and transferring mud. Both are driven by 275-hp., 350-volt motors through a 16 V-belt drive. An automatic manifold valve, quick-opening release valve, and a pressure shear relief valve are included in the circulating hookup.

After drilling and coring to a total depth of 7,649 feet, the hole was reamed from 6¼ to 9 inches from 7,632 feet to total depth and 255 joints of 10-thread 7-inch O.D. casing set and cemented with 250 sacks at 7,644 feet. Plug was pumped down to 7,584 feet. The Wilcox, part of which showed some saturation, was present from 7,655 to 7,677 feet.

A temperature bomb failed to locate the height of the cement behind the pipe and drilling in of the well started. On test, the well showed no possibilities in the deep horizon and successive plugging back was started. A Baker cement retainer was run at 6,961 feet and both the casing and formation tested. Casing was perforated with 10 shots from a gun, air starting to blow after the first shot. A 5-inch bailer encountered rotary mud at 5,400 feet and after filling the hole full of mud it was found that circulation could be gained through the perforations with 700 pounds pressure. The well was plugged back further with 75 sacks of cement to 6,851 feet where the well was to be tested again as soon as the cement hardened. All of the upper formations that show indications of making a well will be tested before the hole is abandoned.

While both of the tests failed to open new pools they afford a great amount of information on the deeper formations and drilling conditions to be expected when a commercial producer is encountered in this area and drilling of a field starts. Ordinary prudence in regulation of the weight on the bit will be the major requirement for keeping the hole straight. While only 5 points weight is advisable in broken formations, as much as 8 points may be run on the harder massive formations. A heavy drill collar and weighted pipe just above the drill collar will aid in straight drilling. Fast rotating speeds after passing the Checkerboard may result in twist-offs as a tendency to cave is noted in the lower Pennsylvanian shales. Maintaining the mud properly with as little free water as possible will aid in reducing the caving. Mud will probably come in for a close study on future wells drilled in the area because of the large number of places where returns may not be complete or circulation may be lost. Heavy, fast rigs with large pumps will aid in avoiding trouble as they afford ample circulation. Nine-inch holes below 1,000 feet will be best drilled with 4½-inch drill pipe.

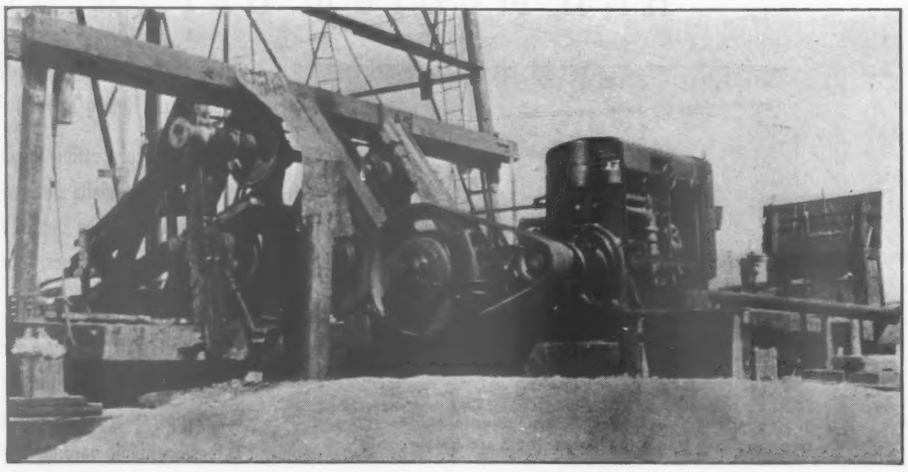
By close study and proper bit selection, wells may be drilled to a depth of 7,600 feet in this area with less than 60 bits. This figure may vary as much as 10 bits from well to well due to presence of unusually hard streaks occurring in some spots and not in others. In the two recent tests, one of the wells encountered an unusually abrasive streak at 6,825 feet while the other showed only a slight tendency to harden at the same point. For the present an estimate of from 70 to 80 bits will be required for a well in this area. From 50 to 60 days time will be required to drill a hole to the Ordovician formation in this area. Wildcats take considerably longer time.

While the Pennsylvanian is thicker in the Norman area than it is to the northern part of Oklahoma County, much of it is of the harder formations as well as the softer ones. The formations below the Pennsylvanian also thicken considerably, the Hunton lime being in the neighborhood of 200 feet. A rough guide of what may be expected in the way of bit performance in future development in Cleveland County may be obtained from the following tabulation which shows changes in hardness as evidenced by change in drilling speed and footage per bit.

From	To	Bits	Av./bit	High	Low
900-2,636	.....	5	347	702	220
2,636-2,794	.....	1	158	...	...
2,794-3,434	.....	3	213.3	236	202
3,434-3,710	.....	2	138	168	108
3,710-3,780	.....	1	70	...	...
3,780-4,295	.....	3	171.6	211	114
4,295-4,358	.....	1	63	...	...
4,358-4,880	.....	4	155.5	159	110
4,880-4,984	.....	2	52	54	50
4,984-5,325	.....	3	113.6	135	95
5,325-5,374	.....	1	49	...	...
5,374-6,084	.....	8	88.7	118	70
6,084-6,136	.....	1	52	...	...
6,136-6,446	.....	3	103.3	135	77
6,446-6,614	.....	3	56	69	47
6,614-6,812	.....	2	99	99	99
6,812-6,825	.....	1	13	...	...
6,825-6,832	.....	4	1.7	3	1
6,832-6,905	.....	1	73	...	...
6,905-7,034	.....	4	32.2	40	24
7,034-7,164	.....	2	65	69	61
7,164-7,207	.....	1	43	...	...
7,207-7,358	.....	3	50.3	58	44
7,358-7,451	.....	4	24.2	28	17
7,451-7,531	.....	2	40	44	36
7,531-7,556	.....	3	8.3	12	4
7,556-7,611	.....	1	55	...	...

The No. 1 Strateger found the Pawhuska at 3,330 feet, the Belle City at 4,765 feet, the Checkerboard at 5,515 feet, and the base of the Pennsylvanian at 6,821 feet. The No. 1 Taylor of the Gulf Oil Corp. had the Pawhuska at 3,855 feet, Oread at 4,752 feet, Hogshooter at 5,587 feet, Checkerboard at 5,809 feet, Woodford at 6,918 feet, Hunton at 7,001 feet, Sylvan at 7,192 feet, Viola at 7,296 feet, and the Wilcox at 7,655½ feet. The Harper & Turner No. 1 Taylor will provide more information on this vicinity and it may result in uncovering the deep pool that has been the goal of so many wildcats in this area in recent years.

CABLE TOOL DRIVE ON ROTARY DRAWWORKS



Cable tools are frequently referred to as the old method of drilling as it was by this method that many of the older wells in the country were drilled. Until the introduction of the rotary method, cable tools were supreme. The advantages of the rotary in cutting through caving formations and the elimination of large pipe patterns made it a keen competitor of the standard rigs. The rotary gradually superseded the cable-tool method drilling.

Great strides have been made in the manufacture of machinery used on drilling rigs particularly those used for rotary work. As the depth of the wells increased, rigs grew larger; rigs using 10-inch shafts are now being manufactured; 3-inch shafts were used when the rotary method was introduced. While cable-tool rigs were improved, the advancement was not as noticeable since many contractors did not feel justified in buying new standard rig equipment when a large number of strings of tools were on the rack.

There has been a noticeable revival of the employment of old rigs discarded years ago in the drilling of shallow wells in Illinois and Texas. Many of these rigs use the steam machinery with which they were originally equipped but others have purchased internal combustion engines and clutch units for driving the drawworks and rotary table.

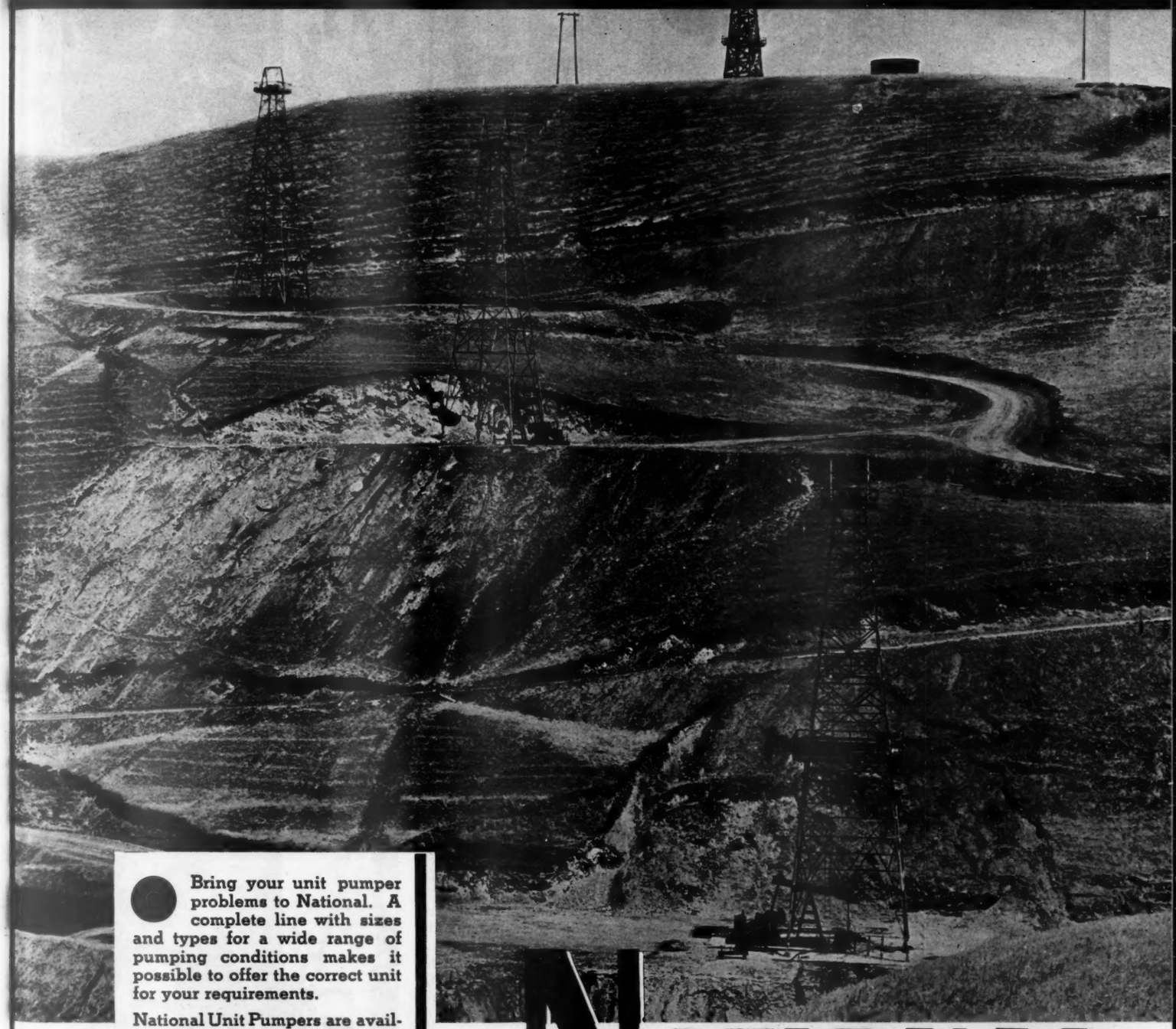
In the photograph is an old style, two-speed, three jack-post rig which was originally equipped with a steam drilling engine. The drawworks comes apart in 12 major pieces: line shaft, drum shaft, three jack-posts, two headboards, five braces and an assortment of turnbuckles and clutch rods and yokes. It is a far cry from the modern, compact, unitized drawworks. This rig is equipped with an overhead rotary clutch and a "knee-buster" low clutch. It has been in use between 15 and 20 years. It is now being used to drill 2,100-foot wells near Grand Falls, Tex.

Drive of the hoist and rotary is through new equipment which was designed for motor-driven standard rigs. The large internal combustion engine uses gas for fuel and drives the drawworks through a 2-A cable-tool drilling unit which ordinarily is used for driving the band-wheel on a standard rig. The unit is equipped with a two-speed, reversible transmission and is of the type widely used on motorized standard rigs in eastern fields.

This combination of the old machinery of the new method, being used with new machinery of the old method, is typical of the means used by drilling contractors today to utilize machinery which was at one time abandoned because it was unsuitable for the tasks confronting it.

ROUND MOUNTAIN FIELD PROPERTIES OF THE VEDDER INTERESTS, KERN COUNTY, CALIFORNIA

All Unit Pumpers are NATIONAL



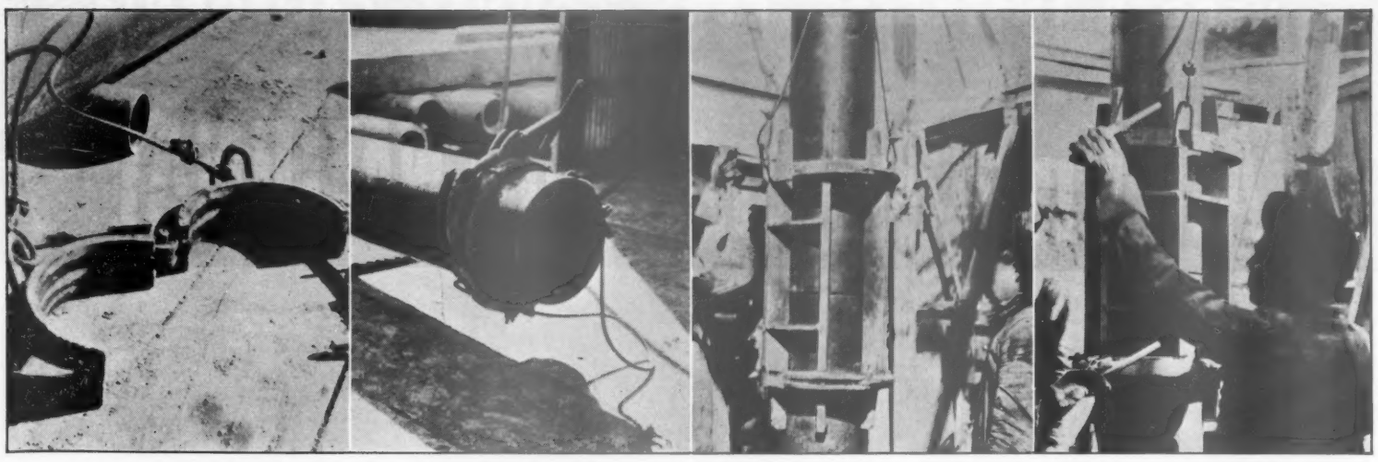
Bring your unit pumper problems to National. A complete line with sizes and types for a wide range of pumping conditions makes it possible to offer the correct unit for your requirements.

National Unit Pumpers are available in a full range of sizes and types for the complete present day requirements of single well pumping. They are economically installed, and especially adaptable to field conditions. Their design achieves economy through compactness and simplicity and without sacrificing the features essential to efficiency and long life.

NATIONAL

THE NATIONAL SUPPLY COMPANY

EXECUTIVE OFFICES: PITTSBURGH, PA. DIVISION OFFICES: FT. WORTH, TEXAS; TULSA, OKLA.; TORRANCE, CALIF. GENERAL SALES OFFICE: TOLEDO, OHIO



Clamps for lifting the joint into a vertical position in the derrick are shown at the left. Clamps for aligning are shown at the right

ARC WELDED CASING

By G. M. Stearns

Cities Service Oil Co., Russell, Kans.*

Until recently the general practice among oil operators has been to use threaded and coupled casing, with some exceptions in the case of "stovepipe" surface casing of comparatively light weight and short length. Within the last year, however, the company with which the writer is connected, along with other oil companies, welding concerns, and pipe manufacturers, has developed a new technique in the installation of casing which involves arc welding of the joints of casing on the derrick floor, as the casing is run into the well. This new practice is now being adopted by us because of: (1) the substantial saving that can be realized in the total cost of the pipe strings, as will be analyzed in detail in this paper; (2) increased joint strength which makes possible the safe running of longer strings of pipe and results in less possibility of loss of pipe in the hole due to failure of the string when under stress; (3) less possibility of leaks under high pressure conditions; (4) possibility of more complete recovery of pipe on abandoned wells, since with butt welded joints there are no couplings or similar projections on the outer circumference of the pipe to hinder pulling the string. Since these advantages are of vital consequence, there is little doubt that the arc welding of casing will within a short time become a general practice and replace the former method of running screw pipe. Even in wells where the casing is to be only temporarily installed, the development of portable cutting and beveling machines may result in practically universal use of welded casing in wells.

*The author of this paper received the second main award, $2,543.88, in Containers classification of the $200,000 program sponsored by the James F. Lincoln Arc Welding Foundation, Cleveland, Ohio, in which savings of $1,600,000,000 were shown available to industry by wider application of arc welding. The paper, reproduced here in brief form, contains approximately 5,000 words, 1 drawing and 10 photos.

Special Tools Used in Running Butt Welded Casing

The running of butt welded casing required a number of tools which are different from tools commonly used in running threaded and coupled casing. The first operation, which required a different tool, was the picking up of each joint from the rig walk and lifting it into a vertical position preparatory to aligning for welding. In running threaded and coupled casing each joint is picked up merely with a hemp rope noose which is slipped on beneath the coupling. This method would not be safe with the plain end pipe. These rings are ridges of babbitt that are poured into grooves cut on the inside of the steel clamps. This was done as an extra safety precaution to prevent the clamps from slipping off when pulling the joint up into the derrick. Another new tool devised for the running of the plain end butt welded casing was the set of clamps for lining up each joint with the joint just below it. Clamps are about 42 inches in length, hinged on one side with toggle screws on the opposite side. They are hung on a line which runs over a pulley up in the derrick and has a counter-weight on the other end to balance the weight of the clamps. The casing crew can quickly place them around the joint to be welded and tighten them to hold the pipe straight until the welders tack-weld the pipe sufficiently to hold the upper joint in position. The clamps are then removed and hung in the derrick until needed to align the next joint.

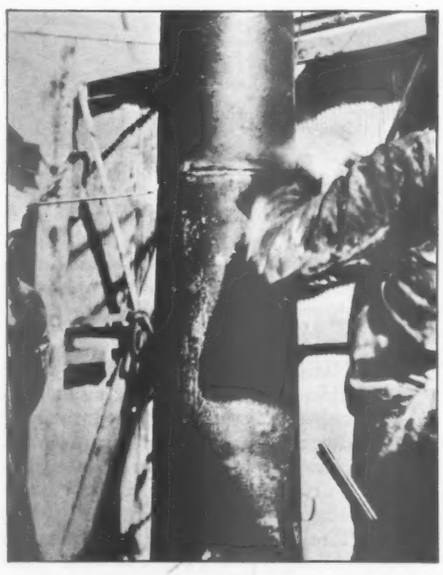
An automatic trip casing spider is better than the ordinary casing spider to use on the derrick floor for holding the part of the casing already in the well, since the automatic spider is not so apt to allow the dropping of pipe before reaching the desired setting depth. The automatic spider can be set merely by tripping one lever, while each slip must be placed separately around the pipe when using the ordinary spider. Because of the fact that there is no coupling at the top of each joint of plain end casing, the ordinary casing elevators to use in letting the pipe into the well could not be used. It was found necessary for this reason to use slip-type elevators. Although the slip-type elevators are more cumbersome and slower of operation than ordinary elevators, we know of no other way to insure the holding of the casing. Extra care is taken to keep the teeth sharp on the slips of the casing spiders and elevators.

Complete Data on Typical Job

The data tabulated below is an actual report from the running of a string of casing into one of our wells in the Letsch pool of Russell County, Kansas:

Description of casing: 7" O.D. 22 lb., plain end. (Carbon content—0.25%, Manganese—0.80%).	
Kind of bevel: Each joint with 15° on top and 45° on the bottom.	
Total joints of casing run into the well	69
Total circumferential welds (including shoe and nipple)	71
Total footage of casing string	2,993
Number of beads at each joint	3
Total elapsed time per joint (overall): 8 Mins., 10 Secs.	

Welding time given here is from a stop-watch timing of the period of arc contact for each step in individual welds. The rest of the total time was consumed in cooling of the weld before lowering into the drilling fluid, filling casing with fluid,



Two welders putting on the first bead

hammering welds, picking up and lining up joints and other auxiliary operations.

Average actual welding time—tack weld	29 Secs.
Average actual welding time—1st bead	46 Secs.
Average actual welding time—2nd bead	71 Secs.
Average actual welding time—3rd bead	72 Secs.
Average actual welding time—total per joint	3 Mins., 38 Secs.
Total lbs. of welding rods used	52 Lbs.
Ave. lbs. of weld metal per joint	0.73 Lbs.
Tensile strength of welding rod, lbs./sq. in.	100,000 Lbs.
Total actual time generators were delivering power	4 Hrs., 18 Mins.
Average amperage delivered	175
Average voltage of generator	30
Power output of two generators for entire job	45.15 KWH

On this job two Lincoln "Shield Arc" welders driven by Ford V-8 engines were used. Each of these units was mounted on Ford trucks for portability. Three welding operators were on the job, two working at one time and one acting as relief man.

Casing Welding Method

Aligning clamps placed on each joint. Joint tack welded at four points. Aligning clamps taken off. First bead welded on. Slag chipped off manually with ball-and-peen hammers and wire brushes. Second bead welded on. Slag chipped off as before. Third bead welded on. Weld allowed to cool about one minute, 45 seconds before placing the weld in tension by lifting the pipe to remove the slips from the casing spider in order to lower the pipe into the well. An additional 15 seconds elapsed before each weld came in contact with the drilling fluid, which made a total of about two minutes cooling time for each weld before quenching in the drilling fluid. Tests run by the National Tube Co. showed this to be ample cooling time to prevent embrittlement and consequent weakening of the weld and adjacent steel in the pipe which might occur if the welded joint were immediately lowered into the fluid-filled hole.

It is doubtful if the use of the ball-and-peen hammers and wire brushes for slag removal is an effective method. We are considering the use of an electric hammer for this purpose, since such an instrument would possibly be more effective in removing the slag along the edges of the weld.

Cost Analyses

Since the casing job described above is quite typical of our method of running a butt weld casing string in western Kansas, it will be used as a basis from which to calculate the saving to the oil operating company which installs this type of casing string rather than the generally used threaded and coupled string.

There are two situations which should be considered separately in calculating this saving. First, there is the oil company which has its own welding equipment and hires operators at a certain rate per hour or on salary. Such a company should necessarily have a large amount of welding work in a particular locality to justify having its own machines and operators. Second, there is the oil company which hires a welding concern with machines and operators to do each individual job as it arises. Our company falls within this latter class. Since there may be oil companies in each class an analysis of the cost for each situation is worked out in this paper.

The running of welded casing consumes only slightly more time than the running of threaded and coupled casing; but on the other hand, the installation of a welded string requires a smaller crew, aside from the welders, than for running threaded and coupled casing. So in calculating the saving this additional running time is neglected since it should be offset by the smaller crew. Anyway, as time goes on, the running time of welded casing can possibly be made to at least equal the running time for threaded casing. Thus, the saving due to the use of welded casing resolves itself into the difference between the cost of plain end casing and the cost of threaded casing minus the cost of welding.

1. Saving to the oil company which does its own welding:

Cost of 2,933' of 7" O.D., 22 lbs., threaded and coupled casing @ $105.53 per 100 feet	$3,095.19	
Cost of 2,933' of 7" O.D., 22-lb., plain end casing for butt welding @ $89.70 per 100 feet	2,630.90	
Saving on cost of pipe		$464.29
Cost of labor in welding—		
3 welders (10 hours @ $1.16 each per hour)	34.80	
25% overhead on labor	8.70	
Cost of weld metal (52 lbs. @ $0.16)	8.32	
Cost of power (45.15 KWH @ $0.06)	2.71	
Mileage on welding trucks to and from well location (30 miles each @ $0.05 each per mile)	3.00	
Total welding cost		57.53
Total net saving		$406.76
Net saving per joint of casing	$5.90	
Net saving per foot of casing	0.139	

2. Saving to the oil company which hires job welders:

Saving on cost of pipe (same as above)	$464.29	
Less cost of welding (10 hours @ $9.00 per hour)	90.00	
Total net savings		$374.29
Net saving per joint of casing	$5.43	
Net saving per foot of casing	0.1276	

Of course, the saving per foot of casing would be influenced by the average length of casing joints. The oil producer should install casing made up of joints as long as practical, since longer joints mean fewer welds. Casing joint lengths can hardly exceed 40 feet, however, because a longer joint cannot be easily pulled up into an ordinary derrick.

Cost analyses calculated from the running of about 1,100 feet of 10¾-inch, 40.5 pounds, casing give the following savings:

1. If oil company does its own welding:

Net saving per 30-foot casing joint	$ 7.44
Net saving per foot of casing	0.2479

2. If oil company hires job welder:

Net saving per 30-foot casing joint	$ 6.74
Net saving per foot of casing	0.2247

The greater net saving per foot on the 10¾-inch pipe as compared to the 7-inch pipe is due to the fact that mill prices for plain end pipe are 15 per cent less than mill prices for threaded and coupled pipe regardless of pipe size. Thus, the "dollar-and-cents" saving in pipe purchase price becomes higher for larger sizes of casing and is in direct proportion to the price of threaded and coupled pipe, whereas the cost of welding does not increase proportionately.

Due to the fact that casing programs vary so radically from field to field, it is practically impossible to arrive at an intelligent estimate of the amount and sizes of casing installed in oil wells in the United States during any particular period. It is apparent, however, that an enormous saving can be realized by the oil producing industry through the use of welded casing strings. In Rice, Barton, Russell and Ellsworth counties in Kansas there were 1,037 producing oil wells completed during 1937. The most generally used casing program in these counties is about 350 feet of 10¾-inch casing and about 3,200 feet of 7-inch casing. In Ellis County, Kansas, where the most generally used casing program is about 1,100 feet of 10¾-inch casing and 3,400 feet of 7-inch casing, there were 194 wells completed during 1937. In these five counties, which represent only 1,231 wells out of 23,600 completed in the United States for the year, the saving by use of welded casing to replace threaded and coupled casing is estimated as follows:

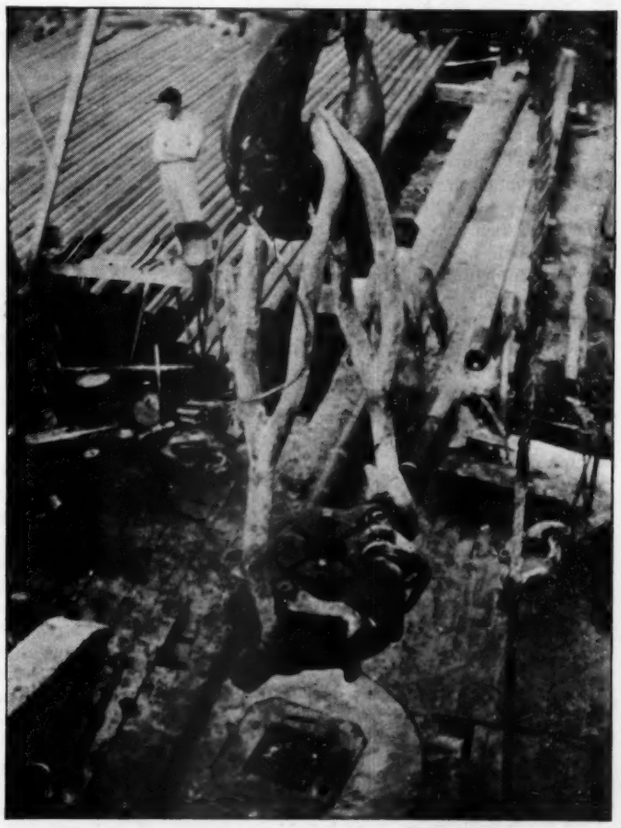
Saving on 10¾-inch string (350 feet @ $0.2247)		$78.65
Saving on 7-inch string (3,200 feet @ $0.1276)		408.32
Saving per well (Rice, Barton, Russell, Ellsworth)		486.97
Total saving for four counties (1037x$486.97)		$504,968.00
Saving on 10¾-inch string (1,100 feet @ $0.2247)		247.17
Saving on 7-inch string (3,400 feet @ $0.1276		433.84
Saving per well (Ellis Co.)		681.01
Total saving for Ellis Co. (194 x $681.01		$132,116.00
Total saving for the five counties on oil wells completed during 1937		$637,104.00

Since it is expected most companies will hire job welders, the saving is calculated on that basis.

The number of producing oil wells completed during 1937 is taken from The Oil and Gas Journal for January 27, 1938.

No attempt will be made to estimate the total saving for all oil wells completed in the United States during last year, but it is interesting to note that this estimated saving of approximately $637,000, is for only 5 per cent of the producing oil wells completed in this country last year.

Because of the two outstanding advantages—increased joint strength and economic saving—there should be no reason why oil producers will not soon adopt the use of welded casing strings as standard practice. There are other incidental advantages which might lend some favor to welded casing. There is the possibility of reducing the clearance between casing strings, which would mean a further saving in pipe costs. Welded casing should be more easily recoverable from abandoned wells than casing with the projecting couplings.



Slip type elevators used for plain end casing

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Metal Fatigue and Corrosion Cause Most of the Sucker-Rod Failures

If a study of sucker-rod failures has been made I would like to know what it has shown, and I am quite sure many others would be interested, too. Will you not publish such facts as may have been obtained concerning sucker-rod failures and the remedy?—H. S. G.

Sucker-rod failures have been a subject of study and research for years, and much information of value has been obtained. The following summary indicates some results of research work:

"The majority of sucker-rod failures have been shown by Wescott and associates to be due to metal fatigue or a combination of corrosion and fatigue. The fatigue properties of a metal are those which allow that metal to resist failure when subject to fluctuating stresses. Each metal has a different value of fatigue resistance depending upon the shape and finish of the metal and the conditions under which it is used. The minimum fatigue resistance is usually obtained when the metal has an uneven surface and is used in a corrosive medium. The effect of an uneven surface such as tool marks, sharp changes in structure, deep-cut threads, etc., is to increase the stress concentration at the point of change in cross section of the metal. Under the condition of a fluctuating load this stress concentration may be sufficient to start a small crack which will grow to failure with continued application of the load. The effect of corrosion may be to start small pits in an otherwise smooth surface and which in turn will develop this same type of failure. These fatigue failures are characterized by direct breakage across the rod section and without the necking down which is characteristic of tension failures.

"Fatigue failures are particularly associated with high values of momentary stress. When rods are used to pump at long, fast strokes, for instance a 72-inch stroke at 28 to 30 s.p.m. with a 2¼- or 3-inch working barrel in wells 3,000 or more feet in depth, the momentary impulse loads developed are often of sufficient value to cause fatigue failure in a short time.

"A minority of sucker-rod failures are due to embrittlement, corrosion or excessive wear. Sucker-rods used in wells producing hydrogen sulfide bearing fluid may become subject to embrittlement failures not associated with fatigue failures.

"In a few highly corrosive fields the dominant cause of sucker-rod failures is corrosion attack.

"Another type of failure results through wear of the rod or rod coupling on the tubing walls.

"The practical method of reducing sucker-rod failures is to determine for each field the most satisfactory rod to use. Sucker-rods may be obtained of various physical properties depending upon their chemical composition. Their physical properties range from the low tensile strength of plain carbon and wrought-iron rods to the maximum strength of high manganese rods. Each of these rods has some advantage over the others which is manifested only under favorable operating conditions.

"It is advisable to set in each field one or two mixed strings of the various rods and follow their service. It is of extreme importance that the rods be alternated in position in the well string and be tested at the same time. This competition under identical conditions enables a direct comparison of service to be obtained. The service given by the various rods can be balanced against their cost and the most satisfactory rod purchased."

Conflicting Views About Pumping Problem

At the request of a friend whose trouble was discussed with me, I am writing to ask about certain conditions involved in pumping an oil well through a tubing-packer of the straight type, or without any provided escape for gas through 1-inch pipe, or for entrance of air into well through the same inlet. The exact condition follows: A well, approximately 1,500 feet in depth, cased with 6⅝-inch casing, developed a leak in the casing at some point, and, being a very small leak, the owner decided that to save this well he would run a string of tubing with working-barrel and standing-valve regularly inserted. The barrel was placed at the top of the sand and a space of a few feet was left between top of barrel and base of packer. The anchor was about 15 feet long with perforations a foot or so under the barrel. There was a three-quarters inch gas anchor 5 feet long screwed into the standing valve. The well, after first pumping, showed that apparently the packer had not shut the water off; so the tubing was lowered and that fault was overcome by the packer setting and shutting off all salt water but when the water was exhausted the well would no longer pump. Rods were pulled but the cups were not injured and the valve appeared to be clear. Again, on trial, the well refused to pump. At no time in the years of operating this well was there any gas to speak of. The question is: Will a well pump under these conditions—air excluded, or in a partial vacuum? Some field men of the practical type say yes. Some say no.—J. B. M.

Engineering opinion obtained is that you have flooded your formation with accumulated water above the packer. This water, released into the hole, has entered the porous portion of the formation and cut off the oil. While the packer is shutting off water by making a tight seal between tubing and casing, air still can enter the bottom of the hole, so that the air pressure is equalized there. In other words, no partial vacuum is created. It must be stated in frankness that this is only an opinion, for several pertinent points of information are lacking.

Suppose we trace the path of this air entering into the hole below the packer. The upper end of the tubing is open. Air at atmospheric pressure therefore will fill the tubing down to the top of the traveling valve in the working barrel. On the up stroke that valve remains closed, so we will assume that air would not enter then, but when the direction of travel of the valve is reversed and it starts down the lower valve closes and any air between the two valves is compressed. This lifts the traveling valve. Air from the tubing would then enter and equalize pressure in the working barrel. On the up stroke the standing valve will not seat perfectly, so air will surround it and enter into the space below the gas anchor and fill the space below the packer.

You thus have normal conditions in the bottom of the well so far as equalized air pressure is concerned. The column of air 1,500 feet high is not of sufficient weight to exert any appreciable pressure against the formation, so fluid can enter if natural forces within the formation will fill the space in the bottom of the hole with fluid.

As you cannot pump fluid it would appear that oil is not entering the well. If water has flooded the formation it is probable that the face of the sand is closed and in the light of such facts as you give it is recommended that the well be treated to open the pores in the formation.

Repairing Old Steel Tanks

On one of my leases in Kansas I have several different types of storage tanks, gun barrels, 100-bbl. and 5,000-bbl. steel tanks. The bottoms, shells and underside of the decks are all in bad shape due to the sour oil and we were wondering what might be done to protect our steel and wood tankage from this corrosion. I have tried running concrete on bottoms and carrying water over it, but it was not satisfactory and caused considerable expense with little results.—W. R. B.

If you have a lot of old tankage, as your letter indicates, there is very little you can do with it. You will find it will pay you best to discard all of the old wooden and steel tanks and buy modern steel tanks for storage and probably use wooden gun barrels to receive the oil direct from the well.

You speak of sour oil. The damage is probably due to the hydrogen sulfide accompanying the oil and if this gas is separated from the oil in the wooden gun barrel there should be no great damage to the steel lease tanks into which the oil is run for pipe line delivery.

While hydrogen sulfide will react with ferrous metals and accelerate corrosion it is possible to dissipate this gas in a wooden tank into which the gas, oil and water are delivered direct from the well. Have the tank well vented and spray the production into the tank so that the oil and gas will be separated promptly. Allow the oil to settle and drain off water continuously. The results should be good pipe line oil practically free of hydrogen sulfide gas and if this oil is run into well constructed bolted or welded steel tanks that have been very carefully painted, inside and outside, with aluminum paint it is probable they will last as long as the lease. At least two and preferably three coats of aluminum paint should be applied to the inside of the tank and before the first coat is put on the sheets should be carefully cleaned of dirt and other foreign material.

If it is possible to thoroughly clean the inside of the old steel tanks you now have a good coat of aluminum paint will help, but it is very doubtful if it is worth the cost to take those tanks down and give them the type treatment needed to remove all traces of corrosion before painting. If they are similar to other old tanks so commonly used in the older fields it can be shown that it is cheaper to junk them and buy new tankage.

The evaporation losses from the old battery probably cost you as much as the new storage will cost if spread over a period of time.

HYDRAULIC RAM TYPE

3000 POUNDS PRESSURE

No frills nor gadgets—just clean cut lines that mean strength, and lots of it.

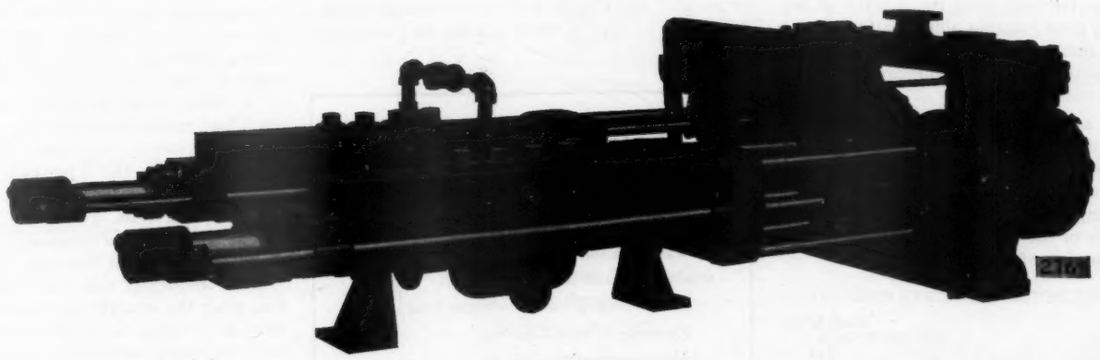
A thoroughly dependable, simple and durable 3000-pound working pressure pump, for flushing, cleaning and testing around a refinery, and other high pressure work.

The cylinder bodies are forged steel blocks for utmost strength and all passages are bored out. Valves are of the wing type and are easily removable through screw-plug openings.

Note accessibility of plunger stuffing boxes.

TRANSIT Horizontal Single Hydraulic Ram Type for 3000 pound pressure.

TRANSIT RAM TYPE PUMPS



TRANSIT Horizontal Duplex Hydraulic Ram Type for 3000 pounds pressure.

NATIONAL TRANSIT PUMP AND MACHINE CO.

OIL CITY, PENNSYLVANIA

NEW YORK - PHILADELPHIA - CHICAGO - CLEVELAND - PITTSBURGH - LOS ANGELES - HOUSTON - TULSA

Frick-Reid Supply Corporation
108 N. Trenton Ave.,
Tulsa, Oklahoma

The Lang Company,
207 West First South St.,
Salt Lake City, Utah

Standard Supply and Hardware Company
822-838 Tchoupitoulas St.,
New Orleans, Louisiana

MEMBER

Pratt-Gilbert Company
Phoenix,
Arizona

Transit Pump & Engine Co.,
2261 East 15th St.,
Los Angeles, California

Reeves & Skinner Machinery Co.
2211 Olive Street,
St. Louis, Missouri

Eugene V. Winter Co.,
320 Market St.,
San Francisco, California

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Control of Ammonia in Gas Lines When Preventing Hydrate Deposits

On Page 61, January 13, 1938, of The Oil and Gas Journal, you gave a most interesting discussion on Inhibiting Hydrate Deposits in Gas Lines With Ammonia. We have since had some success with this method. Is there any test available to determine when there is excess ammonia, especially in the presence of hydrogen sulfide? This is important when the gas is to be sold for fuel.—H. S. G.

Hydrogen sulfide cannot exist where there is any free ammonia, because the two unite to form ammonium sulfide. When ammonia is used as an inhibitor, it is advisable to inject it into the system in slight excess, but not enough to impart an odor to the gas.

The small quantity required to make the gas alkaline may be detected by means of pH test papers or color indicators. The test papers may be moistened with distilled water, then introduced into the gas or into water saturated with the gas. A small quantity of the gas passed into a wash-bottle containing distilled water and a drop or two of Cresol Red or phenolphthalein will cause the characteristic color change if alkaline.

Note: See similar material, The Oil and Gas Journal, Sept. 22, 1938, p. 83.

State Motor Fuel Flashpoints No Guide to Service Quality

Is the flashpoint a reliable indication of the quality of motor fuel? It seems that several states use flashpoint in the legal classification of motor fuels.—P. G. S.

Flashpoint, as mentioned in state regulations, is of no value for indicating the quality of any motor fuel. A good gasoline will usually flash below 0° F. A fuel flashing just below 120° F., or even 98° F., would be found to make a very poor motor fuel in most climates.

There are several states which use the flashpoint for regulating the motor fuel tax, the flashpoint temperature, in fact, being in most instances a minimum for kerosene and other distillates. Any product flashing below the temperature mentioned after the name of the state in the table is considered motor fuel in that state.

FLASHPOINT FOR MOTOR FUEL STATE REGULATIONS

State—	Flash below (°F.)
Illinois	110
Iowa	100
Louisiana	110
South Dakota	100
Tennessee	112
Texas	112
Wisconsin	120

Two examples will serve to illustrate how flashpoint is used. Louisiana regulations contain this definition for motor fuel: "The term motor fuel is defined as meaning all volatile gas-generating liquids having a flashpoint below 110° F."

In Tennessee "the term gasoline means and includes (*a*) the volatile substances produced from petroleum, natural gas, oil shales, or coal heretofore sold under the name of gasoline; (*b*) any volatile substance or product less than 112° F. flash test . . . derived wholly or in part from petroleum, natural gas, oil shales, or coal, and (*c*) benzol and/or any other volatile substance used wholly or in combination with gasoline as a liquid fuel. . . . The Department of Finance and Taxation of Tennessee has interpreted the motor fuel tax law to mean that the flashpoint of a liquid, rather than the use to which it is put, is the controlling factor in determining taxability."

Barrels of Oil Converted to Cubic Meters and Metric Tons

What is the correct relation of U. S. barrels of oil to cubic meters and metric tons?—C. B. A.

The equivalent of barrels to cubic meters is a constant because volume only is involved. However, the relation of barrels of oil to metric tons is complicated because the gravity, or weight, of oil varies.

The oil barrel contains 5.6 cubic feet and a cubic meter is equivalent to 35.3144 cubic feet, therefore $\frac{35.3144}{5.6} = 6.3$ barrels per cubic meter by volume. Water, or oil at 10 degrees A.P.I., weighs 8.34 pounds, and a metric ton is equivalent to 2,205 pounds, so $\frac{2{,}205}{8.34 \times 42} = 6.29$ bbls., by weight, is the equivalent of 1 metric ton of water or oil at 10 degrees A.P.I.

If an oil of 33 degrees A.P.I. is to be converted to barrels per metric ton, it is required that the weight of this gravity oil be found. This is 7.166 pounds per gallon, or 300.97 pounds per U. S. barrel. Therefore $\frac{2{,}205}{301} = 7.3$ bbls. of 33 degrees A.P.I. will weigh 1 metric ton. This equivalent, by weight, will change with each variation in the gravity. The liquids must always be considered at or reduced to 60° F.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Triethylanolamine

Use—Gas purification, preparing emulsions, soluble oils and cutting oils.

Form—Slightly yellow viscous liquid.

Formula—$(CH_2.HOCH_2)_3N$.

Molecular weight—149.13.

Specific gravity—1.1258.

Boiling point, °F.—530.

Flash, °F.—355.

LIMITATIONS

Color	Light yellow
Water, max., per cent	1.0
Purity, min., per cent	80

Note: The commercial product, containing approximately 15 per cent diethanolamine and 2.5 per cent monethanolamine, differs but little from the pure compound in physical and chemical properties.

Octane Rating of Gasoline From Crude Oil Varies With Yield

Refiners running paraffin base oil report gasoline of different octane value from the same crude oil. What is the explanation for this if chemical treatment is not considered?—S. W. B.

The paraffin base oils usually produce by direct distillation gasolines of low octane value, when the conventional methods for separation are followed. This means that gravity and volatility are the chief properties considered to obtain a maximum yield of gasoline that will comply with the first essentials of marketing specifications. When octane rating is added to these requirements the yield of gasoline is reduced as the gravity and volatility are raised to obtain a product of higher octane value. This may be illustrated by reference to a series of gasolines obtained by direct distillation from Rodessa crude oil, a paraffin base oil.

OCTANE NUMBER DECREASES WITH YIELD

Yield, per cent	Gravity, A.P.I.	Distillation, I.B.P.	Temps., max.	Octane No.
5	76.9	89	290	65
10	71.6	108	299	59.5
15	68.1	109	320	54.5
20	67.2	110	345	50.5
25	64.7	112	363	46.5
27.5	62.0	130	392	42

Temperatures are °F.

A gasoline having a gravity of 62 A.P.I. and an endpoint of 392° F. representing the maximum yield of 27.5 per cent would commonly pass as one of excellent quality, but when the octane rating of 42 is considered in comparison with straightrun gasolines from other crude oils, testing say at least 60 octane value, it is clear that an improvement in this property is desirable. If the better quality must be obtained on distillation, there has to be a sacrifice in the percentage yield. Consequently, two refineries handling the same Rodessa oil may obtain a total yield of gasoline having different octane values and they would differ in other properties as shown in the table.

If these same gasolines were treated with ethyl lead to produce a gasoline of 70 octane number, the quantity required, in ml. per gallon, would be 0.3 for the 5 per cent yield; 1.1 for 10 per cent; 1.25 for 15; 1.75 for 20; 2.3 for 25 and 4 for 27.5 per cent.

The influence of chemical treatment is not discussed because it was not to be included.

It is frequently true that cracking of the residue, after the straight run gasoline and kerosene have been removed, produces a cracked gasoline with improved antiknock rating. This does not happen when obtaining the best yields from Rodessa oil. Here too a selection may be made for added octane value, if some sacrifice of volume yield is taken. Polymerization will often aid in producing a gasoline of high octane rating.

Briefly, the yield of gasoline of special quality depends both upon operating details as applied to the fractionation of the crude oil and the extent of cracking, together with selection of fractions.

Reference: A. W. Trusty, Crude Produced in Rodessa Is Typical Paraffin Base Oil, The Oil and Gas Journal, October 15, 1936, page 72.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—The fifty-sixth and fifty-seventh wildcat discoveries in Kansas in 1938 were in Ellis and Rice counties respectively. The South Bemis pool in Ellis County was opened in Section 2-12-17w, by a 765-bbl. well and the Rice County discovery was in Section 12-20-10w, and started at 298 bbls. per day.

OKLAHOMA—New operations in Oklahoma greatly exceeded completions in the past week. Four wildcat tests were started in Lincoln, Jackson, Marshall and Kay counties. The completions of the week were of the routine order.

TEXAS—The discovery well in the new Cooke County Ordovician lime pool started off at the rate of 1,200 bbls. of oil per day. Montague County has prospects of a deep oil pool in the lower Strawn sand, west of the town of Nocona. Six wildcats were started in four Permian basin counties. The Seminole pool in Gaines County was extended 3½ miles to the north and a wildcat 2 miles southeast of the discovery well in the Duggan pool in Cochran County produced 75 bbls. a day after an acid treatment. Avoca in Jones County may be the scene of a townsite development, as a half-mile outpost flowed at the rate of 80 bbls. an hour while being cleaned out, and is expected to be a large producer upon completion. Wells from 1,000 to 2,700 bbls. in initial production were completed in Crane, Ector, Gaines, Howard, Upton, Ward and Winkler counties. In Southwest Texas a distillate pool was opened in Refugio County, 5 miles east of La Rosa field. New sand discoveries and extensions to proven fields were recorded. On the Texas Gulf Coast the Cheek field in Jefferson County was extended and two oil wells were being completed about 3,500 feet east of the Fairbanks field in Harris County.

LA-ARK-TEX—The Shreveport pool in Louisiana was extended 1¼ miles to the northeast by a well producing 20 bbls. per hour of 44-gravity oil. Two other wells were completed in the same field. One of the best wells yet drilled in the Cotton Valley pool produced 863 bbls. of distillate in five hours. Two 700-bbl. wells were added to the Magnolia field in Arkansas. On the Louisiana side of the Gulf Coast, distillate production was opened on the Lake Mongoulois salt dome in St. Martin Parish.

MICHIGAN—A new pool was opened northeast of the Salem pool in Allegan County, the discovery well flowing 150 bbls. naturally the first day. Heavy snow and low crude prices combined to make the week one of the quietest of the year.

ILLINOIS—Drilling to the McClosky lime in the Salem field in Marion County is increasing. This week's report of completions shows an unusual number of deep producing wells in that field. Salem is producing in excess of 58,000 bbls. per day and ranks seventh in the country in current pool output.

CALIFORNIA—The state starts off the new year with production 40,000 bbls. per day below the record of the same week last year and there is hope that Pacific Coast operators will stay closer to market requirements in 1939 than in 1938.

Completions in All Fields

(Week Ending December 31, 1938)

	Oil	Gas	Dry	Total	1939 total comp. to date*	1938 total comp. to date
N. Y., Pa., and W. Va.	49	10	5	64	64	98
Ohio	4	6	8	18	18	17
Indiana	0	0	0	0	0	0
Kentucky	2	1	0	3	3	5
Illinois	76	0	8	84	84	13
Michigan	2	2	4	8	8	12
Kansas	14	0	2	16	16	26
Oklahoma	13	2	10	25	25	29
Texas:						
North Central Texas	9	0	9	18	18	34
West Texas	28	0	5	33	33	42
Texas Panhandle	7	0	0	7	7	11
East Texas	16	0	0	16	16	42
East Central Texas	1	2	1	4	4	5
East Texas Border	0	0	0	0	0	6
Gulf Coast Texas	17	1	3	21	21	19
Southwest Texas	26	1	3	30	30	31
Total Texas	104	4	21	129	129	190
North Louisiana	3	0	0	3	3	8
Gulf Coast Louisiana	5	0	0	5	5	10
Total Louisiana	8	0	0	8	8	18
Arkansas	3	0	0	3	3	4
Montana	1	0	1	2	2	2
Wyoming	1	0	0	1	1	6
Colorado	0	0	0	0	0	0
New Mexico	8	0	1	9	9	9
Utah	0	0	0	0	0	0
California	10	0	6	16	16	28
Total United States	295	25	66	386	386	457
Total previous week	362	56	122	540		
Week ending Jan. 1, 1938	328	43	86	457		

*Fiscal year 1939 began December 25, 1938.

Outstanding Fields--Highlights

(Week Ending December 31, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	20	39	2	1,080	878	18,786
Wasson-Bennett	10	21	2	2,194	188	10,445
Ector County	9	49	10	14,820	1,395	41,738
Winkler County	8	14	2	2,062	1,734	36,250
Howard-Glasscock	4	17	4	6,158	1,032	16,139
East Texas	19	29	16	713	25,856	373,339
OKLAHOMA						
St. Louis	4	30	4	871	743	23,825
Oklahoma City	3	8	0	0	1,087	97,425
KANSAS						
Barton County	5	17	2	432	395	10,296
Stafford County	3	18	1	142	221	4,990
Rice County	2	18	4	2,057	1,262	27,423
Russell County	4	23	1	229	1,176	22,515
NEW MEXICO						
Lea County	5	73	8	1,032	1,983	91,170
LA-ARK-TEX						
Rodessa, La-Ark-Tex	1	13	1	480	1,053	63,370
Cotton Valley, La. (deep)	1	15	1	1,750	107	10,215
Schuler, Ark.	1	15	0	0	133	17,485
Jennings, La.	1	13	0	0	132	25,630
MICHIGAN						
Freeman-Redding	3	26	0	0	45	5,115
ILLINOIS						
Central Illinois	49	424	76	20,739	2,120	126,100
CALIFORNIA						
Wilmington	3	9	1	141	602	81,250
KENTUCKY						
Birk City	2	14	1	150	110	4,560

Illinois and Kentucky

By STAFF CORRESPONDENT

76 Oil Wells Completed in Basin; Production Increase

CENTRALIA, Ill., Jan. 2.—With the Salem field in Marion County producing over 58,000 bbls. per day and the Louden pool producing over 22,000 bbls. per day, production in the basin fields totaled 126,100 bbls. as an average for the week. This added to 10,700 bbls. produced in the old fields in the southeastern part of the state brought the average for Illinois up to 136,800 bbls.

Seventy-six new oil wells were completed in the state in the past week, of which 32 were in the Salem pool, 34 in the Louden pool, 3 in Clay County, 2 in Jefferson County, 2 in Richland County and 3 in Wayne County.

The total initial production of 20,739 bbls. would have been considerably larger had operators in the Salem and Louden pools permitted all the wells to flow the full 24 hours, but quite a number of the completions in the Salem pool were completed in the lower, or McClosky lime, pay and among these were wells that produced only a short time on their completion test. Thus wells of 1,000 bbls. and upward in potential initial production are reported only for the actual time they produced. To a lesser degree the same may be said of wells in the Louden pool flowing from Benoist, Bethel, Weiler and stray sands, some of them for only short periods.

The Ohio Oil Co., starting January 1, cut its purchases in the Patoka pool in Marion County 50 per cent and in the Bartelso pool in Clinton County 50 per cent, and in the old eastern Illinois and southwestern Indiana fields 33⅓ per cent. Reductions are based on the company's November purchases. The Adams Oil & Gas Co. largest producer in the Patoka pool, which it discovered early last year, is said to have produced 1,600 bbls. per day from 66 wells, or an average of 24 bbls. per well in November. Thirty-three other wells in the pool, producing in November 411 bbls. per day, are also affected. There are now 110 oil wells in Patoka, but 11 of them did not produce enough oil in the past month to warrant running it.

Eight wildcats were abandoned as dry in the past week in Washington, Jefferson, Perry, Wayne, Clinton, Cumberland, Fayette, and Shelby counties one failure for each county.

Most of the operators in the new fields are faced again with an oversupply of oil, and a limited market. A few companies with pipe line affiliations like Pure Oil Co., Texas Co., Carter Oil Co. and Magnolia Petroleum Co. need buy little, if any, crude as they have their own supply. The nonintegrated companies and individual operators are most affected.

Following were the completions of the week, the initial production representing 24 hours' output unless otherwise stated.

Marion County

In Marion County, Salem pool, Texas Co. No. 30 Johnson, SW cor. NE NE SW Section 5-1n-2e, McClosky at 1,956-60 feet and 1,965-71 feet, flowed 174 bbls. in three hours, estimated good for 1,200 bbls. a day. Texas Co. No. 4 Small, SW cor. NE NE NE Section 5-1n-2e, McClosky lime at 1,991-2,013 feet, flowed 744 bbls. through 1-inch choke. Rockhill Oil Co. No. 9 Foster, NW SE SE Section 7-1n-2e, Aux Vases sand at 1,870-1,902 feet, shot with 20 quarts, pumped 250 bbls., estimated. Rockhill Oil Co. No. 10 Foster, C N half SE SE Section 7-1n-2e, McClosky at 2,012-26 feet and 2,044-60 feet, flowed 985 bbls. Texas Co. No. 6 V. L. Foster, NW cor. NE NW SW Section 8-1n-2e, McClosky at 2,003-10 feet, flowed 210 bbls. Frontier Oil Co. No. 2 Frederick heirs, SW NW NW Section 9-1n-2e, McClosky at 2,052-57 feet, acidized with 1,500 gallons, flowed 625 bbls. Texas No. 1 J. Williams, SW NE NW Section 9-1n-2e, McClosky at 2,072-76 feet, flowed 260 bbls. through 1-inch choke. Texas Co. No. 2 J. Williams, SE NW NW Section 9-1n-2e, McClosky at 2,077-80 feet, flowed 260 bbls. Magnolia Petroleum Co. No. 11 Chitwood, NW NW SE Section 16-2n-2e, Benoist at 1,816 feet, total depth 1,862 feet, pumped 160 bbls. Magnolia Petroleum Co. No. 14 W. O. Chitwood, NW NE SW Section 16-2n-2e, Benoist at 1,834 feet, total depth 1,875 feet, pumped 173 bbls. Magnolia Petroleum Co. No. 16 Chitwood, SW NW SE Section 16-2n-2e, Benoist top at 1,801 feet, total depth 1,842 feet, flowed 240 bbls. Magnolia Petroleum Co. No. 2 C. D. Phillips, SW SW NE Section 16-2n-2e, Benoist at 1,798-1,846 feet, swabbed 196 bbls. Magnolia No. 3 C. D. Phillips, NW NW SE Section 16-2n-2e, Bethel sand at 1,820-65 feet, pumped 216 bbls. Ohio Oil Co. No. 7 Mathew Young heirs, NE SE SW Section 20-2n-2e, Benoist at 1,749-87 feet, flowed 55 bbls. Magnolia No. 12 D. A. Shanafelt, NW NW NW Section 21-2n-2e, Benoist at 1,821-54 feet, pumped 144 bbls. Magnolia No. 20 J. H. Young, SE SW SW Section 21-2n-2e, total depth 1,910 feet, plugged back to 1,806 feet, and produced from Benoist sand topped at 1,778 feet, pumped 165 bbls. Magnolia No. 19 W. O. Chitwood, NE NE SW Section 28-2n-2e, Benoist at 1,794-06 feet, pumped 150 bbls. Magnolia No. 20 W. O. Chitwood, SE NE SW Section 28-2n-2e, Bethel sand at 1,767-69 feet, pumped 120 bbls. Magnolia No. 24 J. H. Young, NE NE NW Section 28-2n-2e, Benoist at 1,806-57 feet, pumped 145 bbls. Magnolia No. 26 J. H. Young, SE NE NW Section 28-2n-2e, Benoist at 1,815-55 feet, pumped 125 bbls. Magnolia No. 29 Young, SW NE NW Section 28-2n-2e, Bethel sand at 1,777-1,812 feet, pumped 120 bbls. Magnolia No. 30 J. H. Young, SE SE NW Section 28-2n-2e, Benoist at 1,794-1,837 feet, pumped 168 bbls. Texas Co. No. 6 Chapman, SE NW SW Section 28-2n-2e, Benoist at 1,759-1,806 feet, flowed 162 bbls. through one-half inch choke. Texas Co. No. 1 R. Frederick A, SE SW NW Section 29-2n-2e, Benoist at 1,769-1,800 feet, pumped 144 bbls. I. D. Lane No. 3 Dempsey, SE cor. NE SW Section 31-2n-2e, Benoist at 1,738-71 feet, flowed 428 bbls. Texas No. 2 W. M. Stroup, NW cor. NE NW Section 31-2n-2e, Benoist at 1,819-52 feet, flowed 75 bbls. Texas No. 6 E. Tate, SE cor. SW Section 31-2n-2e, Benoist at 1,742-75 feet, McClosky at 1,979-89 feet, set 7-inch casing at 1,969 feet and perforated pipe at 1,755-81 feet, flowed an estimated 470 bbls. Texas Co. No. 7 M. Williams, SE NE SE Section 31-2n-2e, Benoist at 1,644-97 feet, flowed 174 bbls. in three hours and estimated as good for 1,200 bbls.

Texas Co. No. 4 J. Richardson, SE SE NW Section 5-1n-2e, Benoist at 1,696-1,749 feet, flowed 63 bbls. in 13 hours, and estimated at 120 bbls. Texas No. 3 J. Richardson, SE SE NW Section 5-1n-2e, Benoist at 1,712-70 feet, flowed 185 bbls. through quarter-inch choke. Texas Co. No. 3 Hopkins, NW NW SW Section 32-2n-2e, Benoist at 1,640-97 feet, flowed 142 bbls. in three hours, and estimated good for 1,000 bbls. Texas No. 1 Shereshoveck, NW SW NW Section 33-2n-2e, Benoist at 1,767-1,828 feet, flowed 120 bbls. through half-inch choke.

In the Patoka pool in Marion County, Adams Oil & Gas Co. No. 12 Wassem B, SW SW NW Section 28-4n-1e, Benoist sand at 1,417-40 feet, pumped 48 bbls.

In Fayette County

In Fayette County, Louden field, Carter Oil Co. No. 2 Albert McClain, SW NE NE Section 5-7n-3e, Bethel sand at 1,568-88 feet, shot with 30 quarts, flowed 196 bbls. of oil and 85,000 cu. ft. of gas. Carter Oil Co. No. 1 Harlan Ramsey, NE NE SW Section 5-7n-3e, Benoist at 1,567-88 feet, flowed 204 bbls. Magnolia No. 17 T. C. Clow, SW NW NE Section 5-7n-3e, Bethel at 1,559-86 feet, shot with 40 quarts, flowed 378 bbls. through tubing in 15 hours. Magnolia No. 18 T. C. Clow, SE cor. NE NW Section 5-7n-3e, Benoist at 1,548-78 feet, shot with 20 quarts, flowed 949 bbls. in 19 hours through casing. Magnolia No. 20 T. C. Clow, NW SE NW Section 5-7n-3e, Benoist at 1,499-1,531 feet, flowed 960 bbls.

Carter Oil Co. No. 4 Irvin Hobbs, NE NW NE Section 6-7n-3e, Bethel sand 1,565-77 feet, shot with 40 quarts, flowed 156 bbls. Carter No. 3 Edith Quade, SW SW SW Section 6-7n-3e, Weiler sand at 1,520-69 feet, flowed 240 bbls. Carter No. 1 Frank Quade, NE NE SW Section 6-7n-3e, Weiler at 1,491-1,509 feet, swabbed 140 bbls. Jarvis Brothers No. 7 Yakey, C N half SW SE Section 6-7n-3e, Benoist at 1,548-80 feet, estimated at 150 bbls. Jarvis Brothers No. 8 Yakey, C S half SW SE Section 6-7n-3e, Benoist at 1,499-1,519 feet, pumped 150 bbls. Carter Oil Co. No. 4 H. S. Williams, NE NW SW Section 7-7n-3e, Weiler sand at 1,475-1,518 feet, shot with 40 quarts, pumped 73 bbls. Carter Oil Co. No. 2 Williams, NW NE SW Section 7-7n-3e, Weiler sand at 1,475-1,509 feet, shot with 20 quarts, flowed 163 bbls. in 16 hours, estimated as a 243-bbl. well. W. C. McBride, Inc., No. 3 Logue, NE SW NW Section 8-7n-3e, Benoist at 1,557-79 feet, shot with 30 quarts, swabbed 204 bbls. in 12 hours. Siegel and others No. 1 Owens, Benoist at 1,505-29 feet, shot with 60 quarts, flowed 150 bbls. in 90 minutes and then quit. Put on the pump it made 350 bbls. in 24 hours.

Carter Oil Co. No. 1 Ola Martin, NW NE NW Section 9-7n-3e, stray sand at 1,573-84 feet shot with 10 quarts, flowed 172 bbls. Carter No. 1 Shelton, NE NW NW Section 9-7n-3e, stray sand 1,556-73 feet, shot with 20 quarts, swabbed 240 bbls. through casing. Carter No. 3 J. A. Welker, SW NE NW Section 18-7n-3e, Weiler at 1,515-59 feet, shot with 20 quarts, swabbed 96 bbls. Carter No. 1 F. W. Coddington, NW NW NW Section 20-7n-3e, Weiler at 1,490-1,545 feet, and stray at 1,588-90 feet, shot with 60 quarts in Weiler sand, swabbed 132 bbls. in 10 hours, plugged back to 1,532 feet, swabbed 488 bbls. in 24 hours. Carter No. 3 Lewis Ripley, NE NE NW Section 29-7n-3e, Weiler at 1,462-81 feet, shot with 40 quarts, flowed 177 bbls. Niagara Oil Co. No. 1 Wilson, NE NW SW Section 31-7n-3e, Weiler at 1,555-1,600 feet, initial production 200 bbls. of oil and 14 bbls. of water.

Texas No. 3 E.P. Philbrook, NE cor. NW SE Section 31-7n-3e, Weiler at 1,543-58 feet, pumped 100 bbls. Carter Oil Co. No. 1 John McFadden, SE SW SW Section 10-8n-3e, Benoist at 1,592-1,608 feet, shot with 20 quarts, flowed 390 bbls. in 17 hours, estimated good for 426 bbls. Carter No. 1 Catherine Cline, NW NE SE Section 14-8n-3e, Weiler at 1,488-1,536 feet, shot with 100 quarts, flowed 816 bbls. of oil and 326,000 cu. ft. of gas. Carter No. 2 Waneta, NW NW NE Section 14-8n-3e, Weiler at 1,432-61 feet, shot with 60 quarts, flowed 515 bbls. Car-

Illinois Fields

HIGHLIGHTS OF THE WEEK: The Salem pool in Marion County, with a production exceeding 58,000 bbls. per day, ranks seventh in the United States in pool production, being exceeded only by East Texas, Oklahoma City, Rodessa, Wilmington, Kettleman Hills and Midway Sunset, the last three in California.

Daily production of new pools, 126,100 bbls.; old pools, 10,700 bbls.; total, 136,800 bbls.

Completed oil wells, 76; operations including locations, rigs up and wells drilling, 547.

ter No. 1 Sydney Rickett, SW NE NE Section 14-8n-3e, Weiler at 1,462-1,500 feet, shot with 80 quarts, flowed 382 bbls. in 14 hours, estimated good for 720 bbls. per day. W. C. McBride, Inc., No. 6 Stokes A, NE NW NE Section 14-8n-3e, pay at 1,423-61 feet, shot with 60 quarts, pumped 275 bbls.

Carter Oil Co. No. 1 Jacob Rhodes, NW NE NW Section 23-8n-3e, Weiler sand at 1,436-83 feet, shot with 100 quarts, flowed 396 bbls. in 11½ hours, estimated good for 846 bbls. per day. Carter No. 2 Kay Birdie, NE NW SE Section 29-8n-3e, Benoist at 1,437-67 feet, shot with 50 quarts, flowed 110 bbls. in six hours, estimated good for 336 bbls. a day. Carter No. 2 Fred Brown, SE NE NE Section 31-7n-3e, Benoist at 1,594-1,610 feet, swabbed 200 bbls. E. F. Jones No. 1 Clara McCann, SW NW SE Section 31-8n-3e, Benoist at 1,561-86 feet, shot with 40 quarts, flowed 796 bbls. of oil and 120,000 cu. ft. of gas. Carter No. 2 Leroy Cummings, NE SW NW Section 32-8n-3e, Benoist sand at 1,555-85 feet, shot with 60 quarts, flowed 107 bbls. in seven hours, estimated good for 550 bbls. a day. Oils, Inc., No. 3 Blurton, SW NW NE Section 32-8n-3e, Benoist at 1,540-48 feet, flowed 461 bbls.

Clay County

In Clay County, Pure Oil Co. No. 2 J. T. McAllister A, C E half NW NW Section 15-2n-8e, pay at 3,000-07 feet, and showings at 3,035-40 feet and 3,050-66 feet, flowed 215 bbls. Pure No. 6 Nella Bunn, C E half SE NE Section 16-2n-8e, pay and showings at intervals from 3,003 to 3,077 feet, flowed 86 bbls. in two hours; acidized with 5,000 gallons, flowed 777 bbls. in 24 hours. Pure No. 5 J. Ullom, C W half, SE SE Section 16-2n-8e, pay and showings from 2,988 to 3,040 feet, flowed 398 bbls. Pure No. 2 Glen Zimmerman, C E half NW NE Section 21-2n-8e, pays and showings from 2,995 to 3,058 feet, at intervals, acidized with 5,000 gallons, pumped 237 bbls.

Jefferson County

In Jefferson County, Beaver and others No. 1 Eickman, NE cor. Section 28-2s-1e, McClosky lime at 2,258-68 feet, flowed 247 bbls. with a little water. Magnolia Petroleum Co. No. 1 Dare, SE SW NE Section 22-3s-2e, total depth 2,801 feet, plugged back to 2,735 feet and acidized with 1,000 gallons, pumped 237 bbls.

Richland County

In Richland County, Pure Oil Co. No. 3 Wakefield, NE NE NW Section 26-4n-9e, Cypress sand top at 2,548 feet, pay at 2,575-95 feet, supposedly Weiler, pumped 170 bbls. Pure No. 4 Wakefield, SE NW NE Section 26-4n-9e, Weiler sand at 2,567-90 feet, pumped 167 bbls.

Wayne County

In Wayne County, H. H. Weinert No. 1 Morlan C (formerly No. 5), SE SE SW Section 28-2s-7e, pay at 3,304-11 feet, flowed 400 bbls. Weinert No. 6 Morlan C, NW SE NW Section 33-2s-7e, pay at 3,303-18 feet, estimated good for 700 bbls. Rockhill Oil Co. No. 4 Twist B, C E half NE SE Section 5-3s-7e (corrected location), pay at 3,329-43 feet, flowed 53 bbls. in three hours, through tubing, estimated good for 400 bbls. a day.

In Clinton County, Hollingsworth No. 3 Kalkbrenner, SW cor. NE NE SW Section 5-1n-2w, McClosky lime at 1,956-70 feet, flowed 50 bbls.

8 Wildcat Failures

In Washington County, J. B. Oberholtzer No. 1 Freeman, SW SW SW Section 10-3s-4w, was dry and abandoned at 1,373 feet. There was no showing in Benoist sand, topped at 1,120 feet.

In Jefferson County, Magnolia Petroleum Co. No. 1 Joe Langa, SW SW SE Section 27-2s-1e, dry and abandoned at 3,867 feet. Top of the Salem lime was at 2,540 feet.

In Perry County, Bert Fields and Rockhill No. 1 Provert Estate, SW SE SE Section 27-5s-1w, topped Fredonia lime at 2,570 feet, and was abandoned as dry at 2,636 feet.

In Wayne County, the Texas Co. No. 1 Gregory, SW NE SW Section 28-2s-7e, was dry and abandoned at 3,334 feet, 5 feet in the McClosky lime, which showed only salt water.

In Clinton County, Phillips Petroleum Co. No. 1 Ackerman, NW NW NW Section 7-1n-2w, topped St. Louis lime at 1,473 feet, and was abandoned as dry at 1,498 feet.

In Cumberland County, Jeffries & Cobb No. 1 Mrs. S. E. Miller, C S half SE SE Section 29-10n-9e, topped Fredonia lime at 2,565 feet, and was abandoned as dry at 2,680 feet.

In Fayette County, Lindsey and others No. 1 Bowers, SW NE SE Section 36-4n-1w, was dry and abandoned at 1,705 feet, Roseclaire was topped at 1,607 feet.

In Shelby County, Jackson & Fisher No. 1 Von Behren, NW NW NW Section 3-10n-5e, was dry and abandoned at 2,175 feet. Fredonia top was at 2,105 feet, approximately.

New Wildcat Operations

In Montgomery County, W. O. Allen No. 1 Ward, NW NW NE Section 23-12n-5w, is a location.

In Christian County, Walter Hart No. 1, SE SW NW Section 10-12n-1e, a location.

In Christian County, Helmerich & Payne No. 1 Hamilton County Land Bank, SE SE SE Section 6-4s-7e, location.

In Clark County, Leland Wagner No. 1 J. F. Baughman, 600 feet from east and 675 feet from south lines of NW SE Section 20-9n-4w of second meridian, rig up.

Washington County, American Seismograph No. 1, NW NW NW Section 24-3n-3w, drilling at 900 feet.

One New Well in Birk City in a Holiday Lull in Fields

OWENSBORO, Ky., Jan. 2.—The only completion in Birk City field in the past week was a 150-bbl. well of Ohio Oil Co., No. 1 Oscar Lively, bottomed at 1,919 feet. Major Oil Co. No. 2 Mrs. Carrie Long was dry at 1,910 feet but will be deepened. These wells are on the Daviess County side of the field.

An important wildcat test is being started in the Scuffletown district of Henderson County. W. H. Parks and others are moving in rotary on the Oscar G. Letcher 518-acre farm. McClosky lime is expected to be found about 2,200 feet.

W. E. Hupp and others are starting a well on the Mrs. H. A. Reno 700-acre farm in the Reed district in Henderson County. Snowden & McSweeney have drilled two dry holes in the district, but may start another.

Following is the record of a typical Christmas week in the field in western Kentucky.

Breckinridge County, Falls of Rough district: A. V. Smith and others No. 1 Mary L. Cave, drilling at 200 feet.

Daviess County, Utica district: A. V. Smith and others No. 5 B. Bristow, drilling at 100 feet. Habit district: Henry & Ross No. 1 Paul Kemp, salt water in Bethel sand; going to McClosky lime. Reed district: W. E. Hupp and others No. 1 Mrs. H. A. Reno, drilling at 300 feet.

Henderson County, Spottsville district: George Graham and others No. 1 Fulton & Yates, set surface pipe. Schuffletown district: W. H. Parks and others No. 1 Oscar G. Letcher, moving in.

Muhlenberg County, 1½ miles east of Belton: Fred Phillips Oil Co. No. 1 Clarence Boggess, report good show of oil in Jones sand. Shut down for holidays.

Ohio County, Friendship Church district: W. E. Neal and others No. 5 John Bellamy, moving in.

EASTERN KENTUCKY

ASHLAND, Ky., Jan. 2.—One small oil well completion and a new gas well mark the report of Eastern Kentucky operations this week. The Hall Co. completed No. 1 Crit Childrens on Walkers Creek in Hell Creek district of Lee County. The well reached a total depth of 1,230 feet and is expected to make 8 bbls. of oil daily. In this same district Leman and others are down 600 feet in No. 1 W. B. Bush on Walkers Creek.

The Inland Gas Corp. reports the completion of No. 205 on the Kentucky-West Virginia Gas Co. land on Trace Fork of Troublesome Creek. The well reached a total depth of 3,245 feet and is making 249,000 feet of gas daily with a rock pressure of 400 pounds.

In the Ida May district, Lee County, Heath & Co. are rigging up No. 5 S. W. Steele on Duck Fork. Price Fraley is down 1,000 feet in No. 1 Dane Mays.

In the Burning Fork district of Magoffin County, Rough River Corp. was at a total depth of 650 feet in No. 4 H. B. Adams, Sr. The crew is seeking to pull two strings of tools from the hole and may have to skid and start over.

In Martin County Kentucky-West Virginia Gas Co. is drilling at 2,078 feet in slate and shells, in No. 574 John and Benjamin Sellards land, on Coldwater Fork. The same firm has plugged No. 5235 on C. W. Preece land nearby.

In Floyd County, Kentucky-West Virginia Gas Co. has reached 2,618 feet, in shale, in No. 578 Sherwood Osborn on Toms Creek. The same firm was drilling at 1,436 feet, in Big lime, in No. 5249 on Alie Ward land on Levisa Fork.

In Knott County Inland Gas Corp. was drilling below 2,685 feet in No. 203 Curtis Pigman land, on Right Fork of Troublesome Creek. The same firm has plugged No. 204 in same vicinity. This well was on the Virginia-Kentucky Gas Co. lease.

CENTRAL OHIO

LIMA, Ohio, Jan. 2.—Central Ohio operations continue at the normal rate with 15 new completions and three old wells drilled into deeper pays, for a total of 18; four oil wells, six gas wells and eight dry holes. A 1,000,000 cu. ft. gas well in Lawrence County marks the fifth successful Clinton test in the new Washington Township pool.

In Ashland County, Hanover Township, Mehowa Oil & Gas Co. No. 5 Dr. F. R. Burnsides, Section 15, found the Clinton sand at 2,615-56 feet. It was dry and abandoned.

In Athens County, Canaan Township, Ohio Fuel Gas Co. No. 1 M. E. Mead, Section 5, had an open flow of 134,000 cu. ft. from the second Cow Run sand at 525-38 feet. In Lodi Township, McBill Oil Co. No. 4 Pearl Sapp, Section 13, was abandoned at 488 feet. The Cow Run sand was missing.

In Knox County, Clay Township, Steri Brown No. 1 E. H. Lasealett, Section 14, is a 1-bbl. pumper in the Berea sand; sand, 755-63 feet.

In Lawrence County, Washington Township, Portage Producers, Inc., No. 5 Cambria Clay Products Co., Section 12, was deepened from Berea at 1,148 feet to the Clinton sand for a gas well gauging 1,100,000 cu. ft. open flow; sand at 2,900-16 feet.

In Licking County, Mary Ann Township, George Kissling No. 1 Marvin Thompson, Lot 9, made 20 bbls. of oil the first 24 hours after shot from the Berea sand at 681-90 feet.

In Lorain County, Carlisle Township, C. A. McMillen No. 1 Mary Fitzpatrick, Section 18, had no Clinton sand and was abandoned at 2,351 feet.

In Meigs County, Orange Township, J. Russell and others No. 1 E. A. Person, Section 36, was dry in the Injun sand; total depth 1,012 feet. In Salisbury Township Ohio Fuel Gas Co. No. 2 R. E. Archer, Section 33, is a Maxon sand gas well with 370,000 cu. ft. open flow; total depth, 1,018 feet. In Sutton Township Tyree Co. No. 2 W. F. Bartells, Section 36, was deepened from the Berea into the Ohio shales for a small gas well; total depth, 3,063 feet.

In Morgan County, Marion Township, W. S. Harris No. 1 Flora Doan, Section 13, is good for 400,000 cu. ft. open flow from the Salt sand at 774-78 feet.

In Muskingum County, Muskingum Township, Section 11, Ellis Coal Co. No. 1 fee found the Clinton sand dry and badly broken; total depth 3,838 feet.

In Noble County, Beaver Township, Barnesville Development Co. No. 1 H. J. Flood, Section 17, is a small Berea gas well; sand at 1,729-37 feet.

In Perry County, Jackson Township, Kissling Drilling Co. No. 1 E. A. Greggs, Section 11, was abandoned at 790 feet.

(Continued on Page 85)

North and East Texas

By
D. H. STORMONT

Cooke County's Ordovician Pool Is Important Discovery

WICHITA FALLS, Tex., Jan. 2.—Cooke County's new Ordovician oil pool, reported in the past week, and the possibility of a second producer for the pool just south of Wichita Falls, in Wichita County, led developments in the North Texas area in the past week.

A well believed to be of much greater potentiality than was first expected is Whitfield, Pearson and Grimes No. 2 Voth, in northern Cooke County. The new well gives the county its first Ordovician production and also a pool that may equal any yet opened in the county. The well flowed 500 bbls. in 10 hours, or at the rate of 1,200 bbls. a day. It previously had been conservatively estimated from between 200 to 300 bbls. daily. Bottomed at 1,793 feet, saturation was drilled from 1,788 feet to the total depth. Location is in the Z. D. Fulton Survey and approximately 20 miles west of the Sinclair Prairie Oil Co. wells on the Walnut Bend structure.

Three miles south of Wichita Falls and in Wichita County, Continental Oil Co. and Petroleum Producing Co. set casing to test what is believed to be the same horizon from which the discovery well is producing, the Marble Falls lime. Bottomed at 5,123 feet, the 6-inch casing was cemented at 5,089 feet. Saturation was drilled from 5,089 feet to 5,095 feet and from 5,113 feet to 5,123 feet. This is about the same level at which the first well encountered saturation. Location is in the Finkler lands of the Green Reynolds Survey, in the southern part of the county. The test is a south offset to the discovery well.

Two Deep Tests in Archer

Archer County received two deep 4,200-foot tests, one a wildcat in the central part of the county, and the other in the Hull-Silk pool of the northern part of the county. Birdwell Oil Co. has made a location for its No. 31-B Oil Investment Co., Lot 2, John Richards Survey, about 5 miles northwest of Archer City. Contract depth is 4,200 feet, and it will seek the producing horizons of the Hull-Silk pool farther north. A 4,250-foot wildcat has been staked by Chapman & McFarlin as their No. 1 Wilson, in Block 22, A.T.N.C.L. Survey, as a south offset to Thurman & Lipscomb No. 1 Wilson, which extended the 4,300-foot pay of the Hull-Silk pool three-quarters of a mile to the northwest.

The Holliday pool continued its active pace with three wells being prepared for completion in the Canyon sand pay, and a new location announced. King Oil Co. No. 2 Jackson, Block 20, Denton C.S.L. Survey, is drilling plug from casing set on pay at 2,629-40 feet. This firm staked No. 1 H. F. Harmel as an east offset to the completing well. Clark & Jennings No. 1 Perkins, Block 21, has set casing on the pay at 2,636-42 feet. A location north, Madden & Goldsmith No. 2 Hamilton & Martin, Block 22, is flowing by heads from pay at 2,629-32 feet while operators clean out.

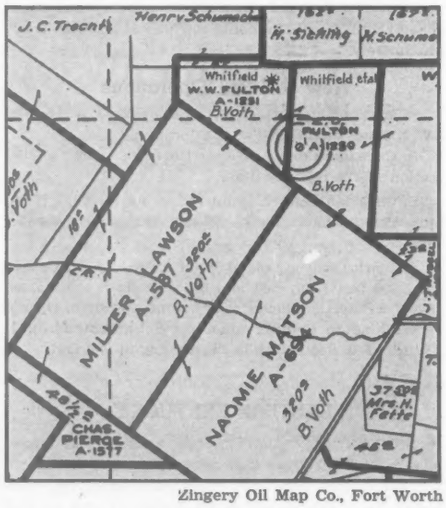
Showing as the first deep oil discovery in Montague County, Rogers & Rogers and Youngblood No. 1 J. E. A. Burnett, in the J. Lenow Survey, wildcat test about a mile west of the town of Nocona, is running casing to test oil indications at 4,639-43 feet, in the lower Strawn sands. The wildcat indicated production several weeks ago from a higher level, but was drilled deeper when salt water broke through.

EASTERN TEXAS

DALLAS, Tex., Jan. 2.—The East Texas district experienced a very inactive week with only scattered wildcat operations centering the interest. In Henderson County, Tide Water-Seaboard-Humble No. 1 McGee, the third well drilled on the deep Opelika gas-distillate structure, and a north offset to the discovery well, is drilling below 7,286 feet, in anhydrite. Also in Henderson County, Humble Pipe Line Co. is progressing rapidly with its line from its Navarro County station at Mildred to the Flag Lake field. The company has unloaded 17 carloads of pipe and has strung the pipe along the right-of-way of the new carrier and welding is under way. This is the only pipe line out of the Flag Lake field of northwestern Henderson County, and is expected to increase development in the area.

Operators in the Cayuga pool of Anderson and Freestone counties were watching Barnsdall Oil Co. No. 1 Tubb, in the Samuel Edmondson Survey, on the east side of the Anderson County portion of the field. The well, seeking production from the basal Glen Rose of the Trinity series, cored a section at 7,475-80 feet, and recovered a show of distillate. Operators plan to make a drill-stem test before drilling deeper.

Trinity County received indications of a new wildcat by Taubert & McKee, who recently abandoned No. 1 First National Bank of Groveton, in the James Walker Survey, Trinity County. Since the abandonment of the first test



Zingery Oil Map Co., Fort Worth

A new oil well has been completed in the area opened last summer in central Cooke County. The first well was a gas producer

the same operators have finished the first of six core holes to be drilled in the area. When all six are completed and correlated, the selection of a site for their second 2,000-foot test will be made.

EAST TEXAS FIELD COMPLETIONS
(One hour production)

Gregg County—Longview Area

Shelby No. 38-B Snavely Heirs, 3,550-3,630 feet, 64 bbls. Shell Petroleum Corp. No. 44 Moore, 3,506-3,603 feet, 36 bbls. Shell Petroleum Corp. No. 45 Moore, 3,539-3,606 feet, 120 bbls.

Gregg County—Kilgore Area

Gulf Oil Corp. No. 17 T. C. Reeves, 3,555-62 feet, 75 bbls. Landsberry No. 13 A. Money, 3,673-74 feet, 60 bbls. Landsberry No. 26 A. Money, 3,672-74 feet, 60 bbls. M. Nathan No. 2 W. B. Walker, 3,561-3,608 feet, 15 bbls. Texas Co. No. 16 R. B. Walls, 3,660-68 feet, 58 bbls.

Rusk County—Kilgore Area

Humble Oil & Refining Co. No. 41-B H. Sexton, 3,643-3,700 feet, 50 bbls. Humble Oil & Refining Co. No. 21 J. T. Sexton, 3,620-87 feet, 20 bbls.

Rusk County—Joiner Area

Gulf Oil Corp. No. 10-D Mayfield, 3,606-13 feet, 20 bbls. Humble Oil & Refining Co. No. 13-A R. A. Barksdale, 3,776-79 feet, 45 bbls. Ohio Oil Co. No. 26 DeGuerin, 3,594-3,665 feet, 28 bbls. Ohio Oil Co. No. 22 H. L. Griffin, 3,631-3,715 feet, 20 bbls.

Smith County—Joiner Area

Georgian Oil Corp. No. 7-B G. Cole, 3,794-95 feet, 40 bbls.

Upshur County—Longview Area

J. D. Reynolds No. 10 J. T. Miller, 3,762-63 feet, 2 bbls.

EAST CENTRAL TEXAS COMPLETIONS
(24-hour production)

Anderson County

Tide Water-Seaboard No. 6 Lutterloh, 3,889-4,022 feet, 85,000,000 cu. ft. of gas.

Cherokee County

J. R. Bunn No. 1 Lang, dry and abandoned at 5,219 feet.

Freestone County

Carter-Gragg Oil Co. No. 1-B Harwell, 3,944-56 feet, 69,000,000 cu. ft. of gas.

Henderson County

Texas Co. No. 3 Nolan, 3,042-43½ feet, 24 bbls.

NORTH TEXAS COMPLETIONS

Archer County

Fish Bros No. 1 D. W. Fish, 1,149-59 feet, 10 bbls.

Cooke County

Sinclair Prairie No. 2 J. M. Best, 4,009-4,934 feet, 1,030 bbls.

Montague County

O. V. Beck No. 2 J. S. Ivins, abandoned location.

Wichita County

Continental Oil Co. No. 4-B Waggoner A, 3,742-73 feet, 560 bbls.; Hanlon Buchanan, Inc. No. 5 Fassett & Tuttle B, junked, 3,955 feet; Pace Petroleum Co. No. 7-A B. Edgerley A, 1,520 feet, dry; Shell Petroleum Corp., and others No. 3 D. R. Preston A, 3,893-4,002 feet, 520 bbls.

Wilbarger County

Deep Oil Development Co. No. 1 H. C. Shive, 3,270 feet, dry; No. 2 H. C. Shive, abandoned location; Phillips Petroleum Co. No. 2 H. C. Shive, 3,380-3,750 feet, pay 3,251-62 feet, 41 bbls.

Young County

L. T. Burns No. 1 G. B. Hamilton, 985 feet, dry.

Conference on Freight Rates In Turner Valley Area

TORONTO, Ontario.—Extended conferences with reference to freight rates on Turner Valley crude have been held between freight officials of the transcontinental railroads and representatives of Alberta petroleum producers. The latter include Herbert Greenfield, president of the Alberta Petroleum Association; Alfred Chard, Alberta government freight rate expert, and M. M. Porter, K. C. of Calgary.

The Alberta operators are seeking a freight rate which will enable them to market Turner Valley crude to Ontario refiners, as well as lower rates for hauling crude to British Columbia ports. Earlier in the year it was estimated that, to meet Mid-Continent competition, Turner Valley crude must be delivered at Sarnia at $2.03 a barrel; but a decline of 35 cents in Mid-Continent crude prices upset this calculation.

You can depend on Champion ROTARY HOSE

Republic's contribution to deep well drilling progress

Handling high pressure is only part of the job Rotary Hose must do in modern oil well drilling. The nature of the work . . . pumping mud to great depths to facilitate drilling and hold back earth and rock from the drill . . . subjects the hose to unusual types of abuse. Complete dependability requires that Rotary Hose be built to withstand all these elements of wear and strain.

Each particular working stress is anticipated in the construction of Republic's Champion Rotary Hose. Besides the ability to unfailingly withstand constant hammering and extreme shocks, Champion is further protected from conditions present in Rotary Drilling—the thick tube is abrasion and oil-resisting, wire reenforcements are designed to minimize expansion and elongation, rubber compounds defy separation of component parts. All such properties are established by research and experience . . . then, proved by rigid tests. You can depend on Champion.

You will find that other grades of Rotary Hose or any Mechanical Rubber Products bearing the Republic label conform to similar factory standards and service requirements. Republic Rubber Division of Lee Rubber & Tire Corporation, Youngstown, Ohio.

MID-CONTINENT DISTRIBUTORS
Frick-Reid Supply Corporation
Tulsa, Okla.
The Bovaird Supply Company
Tulsa, Okla.

PACIFIC COAST DISTRIBUTORS
Pacific Coast Rubber Company
San Francisco, Calif.
W. C. Hendrie & Company, Inc.
Los Angeles, Calif.

REPUBLIC RUBBER

HOSE · BELTING · PACKING · MOLDED PRODUCTS

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Distillate Production From Lake Mongoulois Salt Dome

HOUSTON, Tex., Jan. 2.—The discovery of distillate production on the Lake Mongoulois salt dome, St. Martin Parish, coastal Louisiana, and extensions to several fields along the Texas Coast, were the outstanding developments in the Gulf Coast district the past week.

Texas Co. No. 6 State, in Section 10-10s-9e, Lake Mongoulois salt dome, flowed 42 bbls. of distillate per day through a five-thirty-seconds inch choke, to open the first production on this salt structure, approximately 10 miles west of Napoleonville in the southeastern part of the parish. This well showed evidence of production last week, as a drill-stem test through perforated casing at 9,763-74 feet, showed gas and distillate. The hole was drilled to 10,403 feet, in salt topped at 10,388 feet, and the completion was made after plugging back to 9,740 feet, and drilling out to a total depth of 9,780 feet.

In Avoyelles parish, Sid Richardson No. 1 Haas Investment Co. located on the Eola prospect, Section 7-28s-3e continues to hold interest as additional showings continue to be logged. The well is coring ahead in shale below 7,705 feet, with hard porous sand with an oil odor logged at approximately 7,300 feet. Detailed information on the well has been withheld by the operator since it was reported to have logged a showing at 6,495-6,507 feet. The well is located along the so-called Sparta-Wilcox trend in the northern tier of parishes, and is reported to be checking considerably higher than other wells in that vicinity.

In the Chalkey area, Calcasieu Parish, Humble Oil & Refining Co. is drilling below 5,500 feet in No. 1 Sweet Lake Land and Oil Co. located northwest of No. 2 Katherine Hanzen, the discovery well which is producing distillate from sand at 8,562-68 feet.

Atlantic Refining Co. has started drilling on two tests in the newly opened North Tepetate field, Acadia Parish. No. 3 Klumpp, 1,980 feet northwest of the discovery well, is drilling below 3,600 feet, while surface casing has been cemented in No. 1 Alcide Founerat.

In the newly-opened South Houma field, Terrebonne Parish, Shell Petroleum Corp. made a location for No. 2 Peters, in Section 73-18s-18e, 1,243 feet southwest of the discovery well. Interest in this parish is centered on Texas Co. No. 1 Continental Land & Fur Co. Section 29-18s-14e, which is preparing to drill ahead from a total depth of 11,821 feet, after cementing a string of 9⅝-inch casing at 10,061 feet.

On the Texas Coast

Along the Texas Coast, Humble Oil & Refining Co. completed No. 2 Jefferson Land Co. to extend the Cheek field, Jefferson County, 1½ miles northeast. After making a cement squeeze job at 7,714-16 feet, the hole was drilled out to a total depth of 7,722 feet and the well was completed for an initial production of 15 bbls. of oil per hour, flowing through a three-sixteenths inch choke with tubing pressure 1,400 pounds and shut-in casing pressure 1,975 pounds. The well is northeast of the company's No. 1 Todd, recently completed to extend the Cheek field proper about a mile northwest. Offsetting this well to the northeast, No. 1 E. K. Failor is being spudded.

In the Eureka field, Harris County, Tide Water Associated Oil Co. was preparing to retest No. 1 Max A. Roy, a half mile southwest of production which developed salt water after the well showed evidence of opening production from a deeper sand. The casing was perforated at 7,944-49 feet, and the well flowed pipe line oil for several hours before it began to show 90 per cent salt water, flowing through a one-eighth inch choke.

To the northwest, in the Rosslyn area, 3,500 feet east of the Fairbanks field, two oil wells were being completed in the main Fairbanks pay, and the completions are expected to result in an immediate drilling campaign on the east side of the field. Housh & Thompson No. 1 Yerkes, south offset to Union Producing Co. No. 1 Warneke, has cemented casing on bottom at 6,835 feet, after coring approximately 20 feet of sand. Offsetting the Warneke producer, Sinclair Prairie Oil Co. No. 2 W. W. Goodykoontz is being completed through perforated casing at 6,832-35½ feet. Sand conditions in this area have proven erratic which has resulted in several distillate producers being completed in a deeper sand at approximately 6,900 feet. On the extreme west side of the field Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 Peters, W. K. Hamblin and T. Hogan Survey, was recompleted through perforated casing at 6,966-68 feet. It made an initial production of 129 bbls. through a one-eighth inch choke. This is the same sand which produces on the east side, and the completion is expected to result in flank drilling.

Cedar Point Extended

The Cedar Point field, offshore from Chambers County, in Galveston Bay, was extended 1,300 feet south with the completion of Standard Oil Co. of Texas and others No. 4-118 State, which is flowing 24 bbls. per hour through a quarter-inch choke from sand at 5,943-85 feet.

Approximately 1 mile south of the Turtle Bay field, Chambers County, but in Turtle Bay, Stanolind Oil & Gas Co. No. 1 State, Tract No. 38, is expected to be abandoned after the well swabbed salt water in the Miocene sand through perforated casing at 3,990-4,027 feet. Two attempts to complete the well as a producer from the Marginulina sand at 6,637-41 feet failed, as the well showed salt water.

In the Echo area, Orange County, Sun Oil Co. No. 1-A Lutcher Moore Lumber Co. is preparing to sidetrack at 8,384 feet, after plugging back from a total depth of 9,705 feet, due to a stuck drill stem. This is one of the most interesting wildcats on the Gulf Coast in view of the numerous sands which are reported to have been logged.

Location for an interesting outpost to the Francitas field, Jackson County, was made by R. J. St. Germain for No. 11 Dr. Silvanus E. Elwood in the R. D. Moore Survey, about 4,000 feet northwest of the Crosby Drilling Co. producer.

Two tests in the League City field, Galveston County, were nearing critical depths. Phillips Petroleum Co. No. 1 Patton, S. F. Austin Survey, a north offset to the discovery well is drilling below 8,900 feet, while George Echols No. 1 Maco Stewart, one-half mile east of production is drilling below 8,800 feet. A potential gauge of the two recent producers that opened new producing horizons showed Midstates Oil Co. No. 1-A Maco Stewart capable of producing 232 bbls. per day through a one-eighth inch choke from perforated casing at 9,294-9,304 feet, while George Echols No. 1 Stewart-Ross flowed 100 bbls. of a smaller size choke.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Hastings field: Humble Oil & Refining Co. No. 1-H W. F. Beers, 6,155 feet, abandoned. H. F. Alexander No. 2 Blumer-Steiner, 6,223 feet, abandoned. Stanolind Oil & Gas Co. No. 9 J. W. Surface, perforated casing 5,296-5,303 feet, 627 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 26 Johnson, sand 7,130-40 feet, 700 bbls., quarter-inch choke.

Galveston County

Dickinson field: Benoil Co. No. 1 Gray, perforated casing 8,989-95 feet, gas well. League City field: George Echols No. 1 Stewart-Ross, perforated casing 8,944-68 feet, 116 bbls., one-eighth inch choke. Midstates Oil Co. No. 1-A Maco Stewart, perforated casing 9,292-9,304 feet, 232 bbls., one-eighth inch choke.

Fort Bend County

Orchard field: Gulf Oil Corp No. 58 J. M. Moore, perforated casing 7,693-7,721 feet, 39 bbls., quarter-inch choke.

Harris County

Eureka field: J. W. Frazier No. 1 Emma Helberg, perforated casing 7,698-7,708 feet, 649 bbls., quarter-inch choke. Fairbanks field: Amerada-Stanolind Oil & Gas Co. No. 5 Mills, sand 6,826-54 feet, 132 bbls., one-eighth inch choke. Amerada-Stanolind Oil & Gas Co. No. 2 Peters, perforated casing 6,966-68 feet, 129 bbls., one-eighth inch choke. Friendswood field: Humble Oil & Refining Co. No. 17 Gray, sand 6,064-70 feet, 547 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 1 Ruby, sand 6,071-76 feet, 107 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 6 West Production Co., 6,038 feet, 600 bbls., quarter-inch choke.

Jefferson County

Cheek field: Humble Oil & Refining Co. No. 2 Jefferson Land Co. sand 7,700-21 feet, 384 bbls., quarter-inch choke.

Liberty County

Hardin field: Humble Oil & Refining Co. No. 8-A Partlow, sand 7,763-84 feet, 275 bbls., quarter-inch choke.

Wharton County

Magnet field: Humble Oil & Refining Co. No 2 Blue Creek Ranch Co., 5,539 feet, 72 bbls., one-eighth inch choke. Withers field: Texas Co. No. 25-B Pierce, 5,599 feet, abandoned. Texas Co. No. 11-A Thompson, 5,549 feet, 106 bbls., one-eighth inch choke.

New Pension Plan for S. O. Indiana Employes

Stockholders of Standard Oil Co. of Indiana have approved a new pension plan for employes. Out of 9,272,038 shares represented at the special meeting at Whiting, Ind., approximately 97 per cent voted for it. The new plan became effective January 1, but employes will have a month to determine whether they wish to take advantage of its provisions.

For those signing it is expected to provide monthly income after retirement which, together with federal benefits, will amount to approximately 2 per cent of their monthly earnings multiplied by years of service. Normal retirement age will be 65 for men and 60 for women.

The company will undertake to pay the pensions for past service. As regards future service, the plan provides for equal contributions by company and employes to purchase life annuities from an insurance company. Eventually, the operation of the plan will be entirely on that basis.

Stockholders authorized payment of $2,000,000 into a trust fund which is to be built up to make the payments on account of past service secure against future contingencies. Additional payments are to be made into the fund as conditions may permit until it is large enough to cover all prospective annuities on account of back service.

The new plan replaces one which has been in force since 1903 under which the company paid annuities out of current income on a non-contractual basis. There was no guarantee under the old plan or provision against the contingencies likely on account of the constant increase in number of annuities. Nearly 900 employes are now receiving annuities from the company.

SPEAKING OF "FIRSTS"

The DRILLING EQUIPMENT DIRECTORY

Designed for the User . . . . . .

The Directory is the one book *designed for the user*. Its entire make-up from cover to cover, is definitely planned to effect greater convenience and assistance to those who receive and use it. This fact is reflected in the tabs alone which present one of the most expensive and biggest mechanical jobs ever attempted in the publication of an equipment catalog. But regardless of this great expense, we have made the Directory practical and usable.

Although it will cost approximately $5.00 per copy to manufacture the directory, we intend to distribute it *without cost* to all active drilling contractors, tool pushers, purchasing agents, superintendents, chief engineers, drilling departments of oil companies, and every supply company handling drilling equipment in foreign countries as well as in the United States.

IS THE FIRST . . . book of its kind to have a systematic TABBED INDEX. Eliminates searching—makes it easy and convenient to find information.

IS THE FIRST . . . book of its kind to contain a COMPLETE BUYERS' GUIDE that is systematically arranged and up-to-date.

IS THE FIRST . . . book of its kind to include COMPLETE ENGINEERING DATA. The information contained in this section is equivalent to 20 separate text books —and is authentic and up-to-date.

These and many other exclusive features combine to make the Directory the most outstanding book of its kind. Reserve your space . . . now. "Dead-line" for copy is February 1st.

Published by

The Petroleum Publishing Co.

211 S. Cheyenne St. Tulsa, Oklahoma

Publishers of The Oil and Gas Journal

Kansas Developments

By
DAL DALRYMPLE

Open Fifty-Seventh Pool in 1938 Just as the Year Closes

Just before the close of the old year the fifty-seventh pool discovery in Kansas in 1938 was made in Rice County by J. H. Tatlock No. 1 L. C. Proffitt, in SW SE SW Section 12-20-10w, a mile west of the south end of the Chase pool. The well made a potential production of 298 bbls. at a total depth of 3,335 feet. Another late completion reported was that of the Shell Petroleum Corp. with its No. 2-A Gramm, NE NE NE Section 15-19-9w, Rice County. The well was completed in Arbuckle lime at a total depth of 3,258 feet and produced 218 bbls. in 24 hours.

Discovery in Ellis

The South Bemis pool in Ellis County was opened the past week with completion of Cities Service Oil Co. No. 1 Hall D, C NW Section 2-12-17w, wildcat 13 miles northeast of Hays. It found Arbuckle lime at 3,593-3,603 feet, total depth, and was treated with 1,000 gallons of acid. It pumped 255 bbls. of 31-gravity oil in eight hours, being rated potentially at 765 bbls. of oil daily. Potential test was made with temporary equipment. The discovery well is 1½ miles south of the Bemis field and an equal distance east of the Shutts pool. It is classed by the Corporation Commission as the fifty-sixth wildcat strike in Kansas in 1938, these including some field extensioners and some wells that uncovered new producing horizons in older areas.

Only two new wildcats were reported. Bridgeport Machine Co. No. 1 Frolich, SW NW SW Section 34-12-16w, northeast of the Emmeram pool and west of the Fairport field, in eastern Ellis County.

Barnsdall Oil Co. No. 1 Krehfiel, NE cor. Section 18-25-5w, was location for a wildcat about 5 miles southwest of the Yoder area in Reno County.

Severe weather and the Christmas holidays combined to slow up activity in Kansas fields the past week, the result being that only 16 completions were reported. A gain of two operations resulted, there being 17 first reports.

Rice County

The prolific Geneseo field in Rice County accounted for three of the new producers. The larger of these was Continental Oil Co. No. 8 Wood, SE cor. Section 12-18-8w. It topped Arbuckle lime at 3,192 feet, was bottomed at 3,210 feet, and was acidized with 4,000 gallons. It pumped 833 bbls. of oil in eight hours and made potential of 2,501 bbls.

Shell Petroleum Corp. No. 13 Zajic, SE NE NE Section 13-18-8w, was almost as large, earning potential rating of 2,449 bbls. of oil daily. It penetrated Arbuckle lime from 3,201 to 3,217 feet, total depth, and pumped 816 bbls. of oil in eight hours.

Continental Oil Co. No. 1 Siemsen, NW cor. Section 18-18-7w, topped Arbuckle lime at 3,182 feet, total depth 3,188 feet, was treated with 2,000 gallons of acid, pumped 318 bbls. of oil in eight hours and made potential of 955 bbls.

J. H. Tatlock No. 9 Drews, SE NE SW Section 5-20-10w, in the Rice County sector of the Silica field, pumped 90 bbls. of oil in eight hours and made potential of 273 bbls. Production was from Arbuckle lime at 3,334-36 feet, total depth.

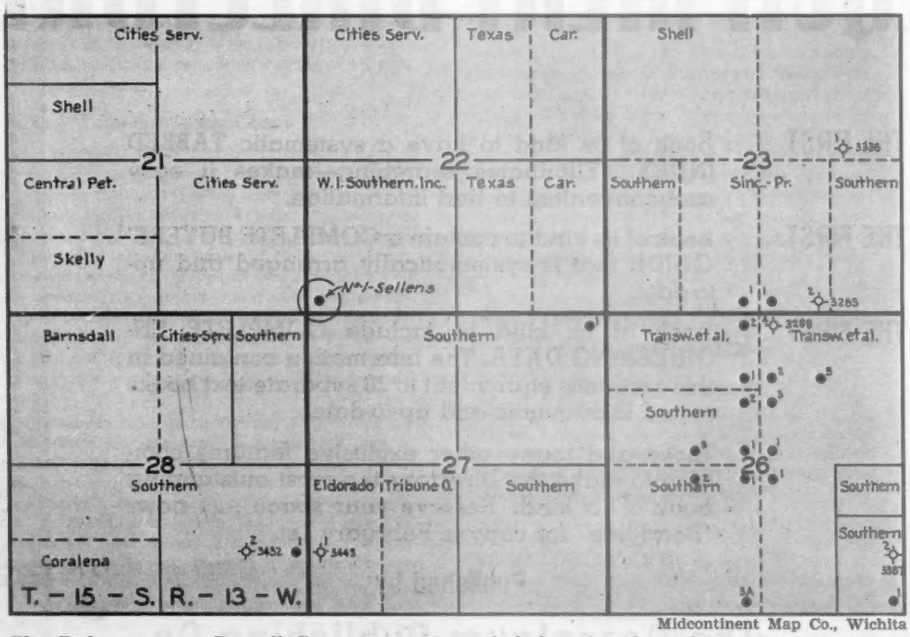
Two new operations in Rice County were reported. Phillips Petroleum Co. No. 3 Bolton, SW NW NE Section 31-18-7w, Geneseo district, was a cellar. I. W. Murfin No. 1 Habiger, SW cor. Section 6-18-9w, Bredfelt area, was a cellar.

Barton County

Western Kansas Oil & Refining Co. No. 1-A Lowery, CSL SW NW SW Section 2-17-13w, Ainsworth field, Barton County, had potential rating of 1,136 bbls. of oil after pumping 379 bbls. in eight hours. Production was from Arbuckle lime at 3,336-43 feet, total depth.

Shell Petroleum Corp. No. 4 Hoffman B, NE NW NE Section 12-16-14w, South Trapp district, topped Arbuckle lime at 3,326 feet, was bottomed at 3,348 feet, pumped 17 bbls. of oil in eight hours and made potential of 53 bbls.

New operations reported in Barton County: Sinclair Prairie Oil Co. No. 1 Prusa, CEL SE SW NE Section 20-16-11w, in the new Prusa pool, was building rotary rig; Phillips Petroleum Co. No. 4 Bitter, NW SE NE Section 6-16-13w, Trapp field, location; Arvin & Bennett No. 4 Steckel, SE SW SW Section 1-20-11w, Silica field, moving in material; Stanolind Oil & Gas Co. No. 14 Panning, NE SW SE Section 10-20-11w, Ellinwood area, building rotary rig; Gulf Oil Corp. No. 5 Spanier, SE NW NW Section 12-20-11w, Silica field, drilling below 430 feet; Champlin Refining Co. No. 1 Grant, NW SW NW Section 20-20-11w, Hagen area, rotary rig.



Midcontinent Map Co., Wichita

The Eichman area, Russell County, was extended three-fourths mile northward at W. I. Southern, Inc., No. 1 Sellens, Section 22-15-13w

Russell County

Westgate-Greenland Oil Co. No. 1 Krug, NE NE NW Section 18-15-13w, Coralena pool, Russell County, found top of Lansing-Kansas City lime at 3,018 feet and was bottomed at 3,051 feet. It pumped 229 bbls. of oil in eight hours and made potential of 678 bbls.

Western Kansas Oil & Refining Co. No. 1 Flegler, NE NE SW Section 2-15-14w, Smoky Hill district, topped Lansing lime at 2,906 feet, Arbuckle lime 3,176 feet, and was dry and abandoned at 3,222 feet, total depth.

Three new operations were reported in Russell County. Texon Oil Co. No. 1 Hall, NW NW SE Section 26-14-13w, Letsch pool, was building rotary rig. Jones & Shelburne No. 2 Kuhnle, SW SE NW Section 4-15-12w, Greenvale pool, was drilling below 870 feet. Western Kansas Oil & Refining Co. No. 1 Maag, SE SE SW Section 7-15-13w, Coralena pool, was building rotary rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ending December 31, and for the preceding week was as follows:

	Barrels	
	Dec. 31	Dec. 24
Oxford City	950	1,075
Burrton	8,775	8,450
Ritz-Canton	4,025	4,100
Graber	2,700	3,150
Hollow-Nikkel	1,850	1,600
Lerado	575	950
Voshell	1,900	1,925
Wellington	1,975	2,025
Ellsworth County:		
Lorraine	1,875	1,935
Other pools	1,220	1,575
Rice-Barton counties:		
Bloomer	2,550	2,350
Chase	3,950	4,650
Geneseo	3,300	3,375
Raymond	800	750
Silica	10,050	12,050
South Silica	2,350	1,750
Keesling	700	750
Wherry	2,700	4,050
Miscellaneous Barton	5,395	6,795
Miscellaneous Rice	5,925	6,335
Russell County	22,525	22,725
Sedgwick County	3,850	3,950
Ellis:		
Bemis	6,375	5,925
Miscellaneous	2,980	3,210
Kingman County	665	615
Stafford County	4,990	6,265
Greenwood County	8,825	8,750
Butler County	19,125	19,795
Other fields	16,200	16,125
Total Kansas	149,100	157,000

Ellsworth County

Continental Oil Co. No. 1 Johnson A, SE SE NW Section 28-17-8w, Edwards pool, Ellsworth County, found Arbuckle lime at 3,235 feet, total depth 3,248 feet, pumped 421 bbls. of oil in eight hours and made potential of 1,265 bbls. of oil daily.

Ellis County

Cities Service Oil Co. No. 6 Rumsey, NW SW SE Section 23-11-17w, Bemis field, Ellis County, pumped 198 bbls. of oil in eight hours and was completed for potential of 593 bbls. Production was from Arbuckle lime found at 3,410-16 feet, total depth.

Stafford County

Stanolind Oil & Gas Co. No. 3 Paulson A, SE NE SW

(Continued on Page 85)

...and that goes for CHAPMAN *Non-Slam Steel Check Valves*

They concentrate on doing their work, and they make no noise about it . . . because they never fall down on the job, or cause trouble along the line. No matter how often they open and close, they never flutter or slam. And they reduce head loss and eliminate leakage.

These valves maintain an unbroken silence because wear has been excluded by a single moving part . . . the balanced disc, with a short flap that rides steadily in the flow when the valve is open. As the flow slows down, this disc is cushioned quickly, quietly to a drop-tight seat. No vibration, hammer or surging.

Chapman Non-Slam Steel Check Valves bring new operating efficiency and *important new economies* to lines in general refinery service, and to natural gas lines, too. Furnished for all pressures, from 150 to 1500 lbs., with any type of end-connection or facing. Standard ASA dimensions and specifications. Put them on *your* lines . . . and no more will be heard from these hard-working valves by you or your maintenance crew.

CHAPMAN

Non-Slam Check Valves ARE MADE IN THESE STEELS

Carbon Steel.
Carbon Molybdenum Steel.
Chrome Nickel Steel.
Nickel Steel.
Chrome Molybdenum Steel.
Chrome Tungsten Steel.
Chrome Nickel Tungsten Steel
. . . . also Iron and Bronze.

CONTACT THE NEAREST OFFICE:

Atlanta, Boston, Chicago, Cleveland, Denver, Detroit, Houston, New York, Los Angeles, Pittsburgh, Philadelphia, St. Louis, Salt Lake City, Syracuse, San Francisco, Tulsa.

The CHAPMAN VALVE MANUFACTURING COMPANY
INDIAN ORCHARD, MASSACHUSETTS

Southwest Texas District

By
F. L. SINGLETON

Refugio County's Distillate Pool; New Pays Discovered

CORPUS CHRISTI, Tex., Jan. 2.—The discovery of a distillate pool in Refugio County, new sand discoveries, and extensions to proven fields, held the attention of operators in the Southwest Texas district.

Rutherford Oil Corp. and Barnsdall Oil Co. joint test, No. 1 Neiman, 5 miles east of La Rosa field, Refugio County, Estaban Lopez Survey, was completed for an initial production of 3,250,000 cu. ft. of gas and an unestimated amount of distillate, flowing through a quarter-inch choke with tubing pressure 2,100 pounds and shut-in casing pressure 2,200 pounds. The well was drilled to a total depth of 6,505 feet and was completed through perforated casing at 5,235-47 feet.

In the same county and located 2½ miles northwest of the Refugio field, Hogan Oil Co. No. 2 Kelley was being watched closely as the well is reported showing some oil from sand at 6,270-6,330 feet. This well has been in the process of completion for several months and it is doubtful if it will make a commercial producer in view of the condition of the hole, which has been damaged by mechanical trouble. It is generally believed that the well is on a separate structure from the old Refugio field, as the sand is believed to be a member of the upper Jackson series, several hundred feet higher than wells in the Refugio and Tomoconnor areas. Regardless of whether or not it will be a producer, additional development is expected to be started in the area at an early date.

Important Prospect

Another interesting development in Refugio County took place in the active La Rosa field where Hewitt & Dougherty were attempting to complete No. 2 Rooke in the deep sand at 6,312-65 feet. The completion of the well would extend the deep sand more than a mile southwest. Casing was cemented after a drill-stem test showed 700 feet of oil and 120 pounds of pressure. In the field proper, Geophysical Service, Inc., No. 3 Spaulding flowed 172 bbls. per day through a one-eighth inch choke from perforated casing at 6,320-23½ feet. Same company's No. 6 Rooke was flowing into tanks after perforating casing at 6,326-29½ feet.

Near the town of LaGloria, southern Jim Wells County, Magnolia Petroleum Co. No. 1 Maun continues to log gas and distillate sands. Sand was cored at 5,971-82 feet, and on a 17-minute drill stem test at 5,973-82 feet, the well tested 425 pounds of working pressure and 8 feet of distillate. Sand was cored at intervals from 6,049 to 6,083 feet and on a 12-minute drill stem test at 6,071-83 feet, 35 feet of mud, cut with distillate, was recovered and the working pressure built up to 950 pounds. This is the third sand cored and the well is assured of opening another field along the Frio-Vicksburg trend.

East White Point Extended

The East White Point field, San Patricio County, was extended about 1,000 feet south as Shell Petroleum Corp. No. 1 Kirk was completed for an average producer from sand at 5,655-68 feet. Plymouth Oil Co. No. 2 Teeter was testing through perforated casing at 5,647½-61 feet, while No. 1 Ficke was flowing into tanks from perforated casing at 5,645-49 and 5,639-43 feet.

In the active McCampbell field, Aransas and San Patricio counties, 5 wells were in the process of completion. Atlantic Refining Co. No. 1 Frank was preparing to complete through perforated casing at 7,198-7,204 feet. Tom Graham No. 1 Hoffman was testing through perforated casing at 7,134-42 feet, and his No. 2 Moore was being tested at 7,123-28 feet. Gorgey & Grote No. 1 McCampbell is bottomed at 7,142 feet with 7-inch casing cemented on bottom, while their No. 2 Gustafson-Young and No. 1 Dinsmore had reached the 7,100-foot sand and are in process of completion. Important extensions made in this field at the close of the year have resulted in an extensive drilling campaign.

Wholesale Drilling

Applications for permits to drill 11 "twin" wells in the Luby field, Nueces County, were filed by Seaboard Oil Co. Nine of the wells will be drilled on the James Luby tract, with the remainder on the Katherine and Luby Shaffer tract. These tests will be drilled to the 4,300-foot sand in which only a few producers have been completed. Two producers were completed in this sand the past week. Stanolind Oil & Gas Co. No. 18 Spessard, flowed 124 bbls. per day through a one-eighth inch choke, while Sun Oil Co. No. 7 McCann, flowed 99 bbls. daily through a five-thirty-seconds inch choke.

In the Riverside area, Nueces County, Seaboard Oil Co. spudded No. 2 Ellen Wilson located in the Winter Garden district, about 8 miles northwest of Robstown. The well is located about 4,500 feet west of the same company's No. 1 Wilson which blew out and crated several weeks ago, and approximately 1½ miles northwest of Stanolind Oil & Gas Co. 1 Clark, a recently completed gas well. Northwest of the Luby field, O. W. Killam No. 1 J. O. Chapman has been abandoned at 7,025 feet.

A new sand for the recently opened Longhorn field, 1 mile south of the Sweden field, Duval County, was indicated by the showing of M. M. Miller No. 1 fee which is drilling to the discovery sand at 4,900 feet after making a drill stem test at 4,037-46 feet, in which the well flowed pipe line oil and working pressure built up to 120 pounds. In the same area, Hiawatha Oil & Gas Co. No. 6 Miller, an offset to the discovery well, tested pipe line oil on a 20-minute drill-stem test at 4,908-13 feet, the total depth, and 7-inch casing was cemented at 4,909 feet.

In the Agua Dulce field, Nueces County, Union Producing Co. No. 1 Brown is drilling below 13,600 feet, making it the deepest test east of the Rocky Mountains and the fourth deepest test in the world. The well has passed through a thick section of heaving shale and has reached its present depth with very little trouble.

On the McAllen-Pharr area, Hidalgo County, Phillips Petroleum Co. has dropped its option to purchase the 15,000-acre block of R. E. Harding and others on which two distillate producers have been completed. Decision to drop the option was made after the company made a series of production tests on No. 1 McCord, located near the townsite of McAllen.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field: Richardson Petroleum Co. No. 1 J. D. Mills, perforted casing 7,116-20 feet, 160 bbls., nine-sixty-fourths inch choke. Shasta Oil Co. No. 1 Crane and Duphrone, perforated casing 7,113-20 feet, 120 bbls., nine-sixty-fourths inch choke.

Caldwell County

Salt Flat field: Martel Petroleum Co. No. 10-A Wright, 2,660 feet, 50 bbls. oil, 300 bbls. water, pumping.

Calhoun-Victoria Counties

Heyser field: Gulf Oil Corp. No. 6 Bonner, sand 5,470-82 feet, 113 bbls., three-thirty-seconds inch choke. Gulf Oil Corp. No. 3 Williams, sand 5,464-80 feet, 120 bbls. three-thirty-seconds inch choke. Humble Oil & Refining Co. No. 19 Welder, 5,787 feet, abandoned.

Duval County

Driscoll field: Continental Oil Co. No. 30-A Driscoll, sand 3,355-66 feet, 204 bbls., quarter-inch choke. Hoffman field: Cox, Hamon and others No. 7 Cuellar, sand 2,573-91 feet, 90 bbls., jetting. Cox, Hamon and others No. 40 Cuellar, perforated casing 2,792-2,802 feet, 72 bbls., jetting. Cox, Hamon and others No. 14 Cuellar, 2,822 feet, 76 bbls., jetting. Magnolia Petroleum Co. No. 21 Weil, sand 2,559-60 feet, 2,774-91 feet, 35 bbls., pumping. Rowan & Hope No. 2-A Cuellar, perforated casing 2,656-98 feet, 16 bbls. per hour, jetting. Lundell field: Moore & Massingill No. 3 Duval County Ranch Co., sand 1,500-08 feet, 145 bbls., jetting. Moore & Massingill No. 2 Duval County Ranch Co., sand 1,505-10 feet, 151 bbls., jetting.

Guadalupe County

Darst Creek field: J. H. Oil Co. No. 1 Roamel, sand 2,536-48 feet, 99 bbls. oil, 100 bbls. water, pumping.

Hidalgo County

Mercedes field: Union Sulphur Co. No. 11 American Rio Grande, perforated casing 7,430-50 feet, 30 bbls. distillate, 2,300,000 cu. ft. of gas, five-sixteenths inch choke. Fohs Oil Co. No. 1 Wood, perforated casing 2,935-49 feet, 18 bbls. per day, various chokes.

Jim Hogg County

Kelsey field: Humble Oil & Refining Co. No. 4 Bass, 4,803 feet, abandoned.

Medina County

Chacon Lake field: A. A. Murrell, sand 387-96 feet, 2½ bbls., pumping.

Nueces County

Luby field: Sun Oil Co. No. 7 McCann, perforated casing 4,345-50 feet, 99 bbls., five-thirty-seconds inch choke. Clara Driscoll field: O. W. Killam No. 11 B. V. Ellick, perforted casing 5,314-31 feet, 168 bbls., one-eighth inch choke. T. S. Reed No. 1 Barlow, perforated casing 5,196-5,200 feet, 638,000 cu. ft. of gas, one-eighth inch choke. Saxet field: J. Simmons No. 1 J. Harrell, perforated casing 4,719½-23 feet, 71 bbls., three-sixteenths inch choke. West Saxet field: Carlos Oil Corp. No. 2 Smith, perforated casing 4,060-69 feet, 96 bbls., one-eighth inch choke. Renwar Oil Co. No. 3-A Kenedy, 4,216 feet, abandoned.

Refugio County

Tomoconnor field: Quintana Petroleum Co. No. 36-C O'Connor, perforated casing 5,842-50 feet, 1,365 bbls., three-eighths inch choke.

Victoria County

McFaddin field: Barnsdall Oil Co. No. 11 McFaddin, sand 4,381-4,403 feet, 132 bbls., one-eighth inch choke. Barnsdall Oil Co. No. 12 McFaddin, sand 4,378-4,403 feet, 32 bbls., 9½ hours one-eighth inch choke.

Webb County

North Killam field: Taylor Petroleum Co. No. 1 Guerra, perforated casing 2,045-54 feet, 131 bbls., pumping.

Zapata County

Escobas field: Texas Co. No. 124 Measles, sand 1,335-43 feet, 60 bbls., pumping.

Significance of Octane In Motor Fuels

The significance of octane in gasoline will be explained in a series of 45-minute broadcasts over the Columbia network beginning Thursday, January 12, at 10 p.m., eastern standard time. Owners will be told why cars cannot give a grade of performance better than the grade of gasoline in the tank, why bargain gasoline is not always the bargain it seems and what's behind the "Contain Lead" sign on pumps. "Tune-Up-Time" will also tell car owners why they should have a complete motor tune-up at regular intervals.

West, Central and Panhandle Texas

By
D. H. STORMONT

Seminole Field Is Extended; Avoca May Be a Major Pool

FORT WORTH, Tex., Jan. 2.—Wildcat exploration held the spotlight in both the West Texas and the Central Texas area during the past week as six new wells were staked in four different Permian basin counties and three new wildcats were located in Jack County, West Central Texas.

Two of the new wildcats were in Andrews County; two in Ector County as outposts to the North Cowden pool, and one each in Crockett and Reeves counties. Atlantic Refining Co., H. L. Wentz, and Standard Oil Co. of Texas announced location for their No. 1 W. F. Cowden, in the southern part of Andrews County, in Section 1, Block 44, T.&P. Survey, about one-half a mile north of the Andrews-Ector county line. It is approximately three-quarters of a mile west and a little south of Sinclair Prairie Oil Co. No. 1 W. F. Cowden, Section 12, Block 44, T.&P. Survey, which showed about 4 bbls. of oil daily from around 4,446 feet, but which was later plugged and abandoned. The other Andrews County wildcat is Wright & McMillen No. 1 Bryant-Link Co., and is in Section 7, Block 48-A, P.S.L. Survey, in the western part of the county. This location is about 3 miles southwest of the Humble Oil & Refining Co. No. 1 Wilson, Section 20, Block 37, which was dry and abandoned at 4,775 feet, after a showing of both oil and gas at 3,085 feet.

Also in Andrews County, Anderson-Prichard Oil Corp. No. 1 W. F. Cowden, northeast edge well in the small Emma pool, flowed 981 bbls. of oil in 24 hours, after it was deepened from 4,226 feet, where it had made only about 10 bbls. per hour after acid treatment. The well's total depth is 4,276 feet.

Ector County Outposts

In Ector County, two outposts to the North Cowden pool were staked. Continental Oil Co. staked its No. 1-8 Mrs. L. E. Wight, SE cor. Section 8, Block 43, T.&P. Survey, as a 1½-mile west outpost to the southern portion of the pool. Texas Pacific Coal & Oil Co. made a location east of the pool, No. 1 O. B. Holt, in Section 19, Block 43, T.&P. Survey, about three-quarters of a mile southeast of A. J. Broderick and George Calvert No. 1 O. B. Holt, completed in the past week for 2,300 bbls. of oil per day to give the field its second largest producer and a quarter-mile east extension.

Crockett County received an 8,000-foot wildcat test when Humble Oil & Refining Co. announced location for No. 1 Ozona-Barnhart Trap Co. in the Edwards Plateau region about 18 miles southeast of the Todd pool. Location is in Section 4, Block M.&N., in the G. C.&S.F. Survey. The test is contracted to the Ellenburger of Lower Ordovician and operators are moving in rotary materials with expectations of commencing work immediately.

In Reeves County, Artie Bean is spudding a wildcat 5 miles southeast of a 15-bbl. well in the Richards-Shaw lands. The new test is in the SW cor. Section 13-59, P.S.L. Survey.

North Basin Area

In Gaines County, extending the Seminole pool 3½ miles to the north, Adams & Bradley No. 1 Crain, Section 216, Block G, W.T. Survey, flowed 40 bbls. of oil in 1½ hours and was then shut in for the erection of storage. Soft lime was drilled from 5,235-73 feet and it was acidized with 1,500 gallons and 4,500 gallons. The hole is bottomed at 5,287 feet in lime.

Only a small amount of oil was reported at the Gulf Oil Corp. No. 1-B Swanson, deep wildcat in northeastern Garza County, after casing was perforated at slightly below 7,100 feet. The showing amounted to only a few gallons of oil and operators are preparing to again perforate casing, this time at about 7,000 feet. The well flowed 150 bbls. of oil in 10 hours when casing was first perforated at 7,327-34 feet, but water broke through and the crew was unable to obtain a shutoff by plugging some of the lower shot holes, so that horizon was abandoned. The well was originally drilled to a total depth of 8,104 feet. Location is in Section 25, Block 2, H.&G.N. Survey.

In Cochran County, Texas Co. No. 1 Boyd, Labor 25, League 56, Oldham C.S.L. Survey, 2 miles southeast of the discovery well in the Duggan pool, was reported to have tested 75 bbls. of oil in 24 hours after treatment with 2,000 gallons of acid. The crew was still testing the well which is showing some basic sediment and water after having plugged back to 5,086 feet.

WEST CENTRAL TEXAS

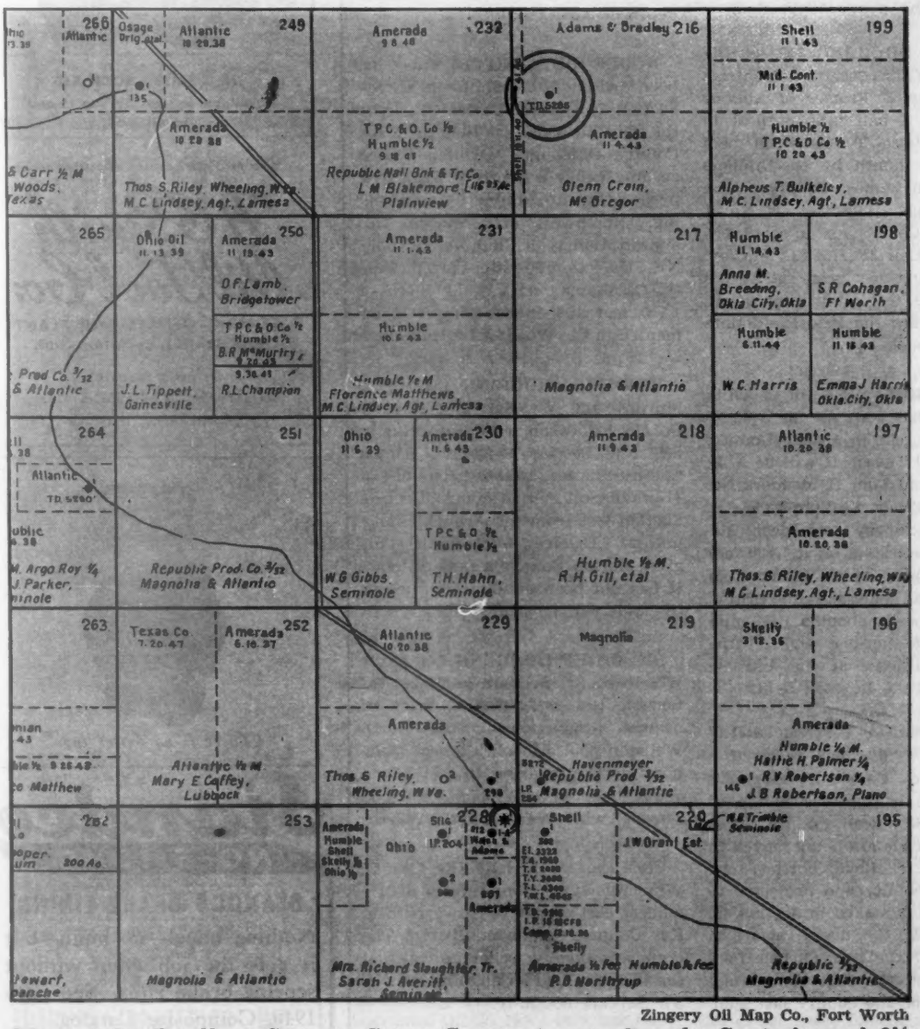
Jones County and Jack County held most of the attention in the Central Texas area as the new Avoca Townsite pool of Jones County continued to increase in size, and three new wildcat locations were announced for Jack County.

One-half mile west of the north offset to the discovery well in the Townsite pool, Fred Browning No. 1 Independent School District, in the outskirts of Avoca, drilled saturation in the Palo Pinto lime from 3,280-3,205 feet, cementing casing, and awaited the passage of New Year's Day before drilling the plug. Location is in Section 21, Block 3, H.&T.C. Survey. If the well is as large a producer as predicted, extensive drilling is expected for the townsite of Avoca. The third oil well in the pool, discovered only last month, was being completed by Ungren & Frazier as their No. 1 Culwell. The well flowed at the rate of 80 bbls. per hour while cleaning out, after drilling into saturation at 3,215 feet and carrying it to 3,231 feet, total depth.

Also in Jones County, the newly productive area discovered by Hedrick No. 1 Akard in the G. Martinez Survey in the southern part of the county received an indication of further development in the near future when M. L. Staniforth was reported to have paid $5,000 cash and contracted to pay $10,000 out of oil to Huylar W. Lee, geologist, of Abilene, for an 80-acre lease southwest of the discovery well.

In Jack County, Ben Rankin announced location for No. 1 Fred Warren, in the T.E.L. Survey, Abstract 792. It is in the vicinity of the old Cosden Oil

(Continued on Page 86)



Zingery Oil Map Co., Fort Worth

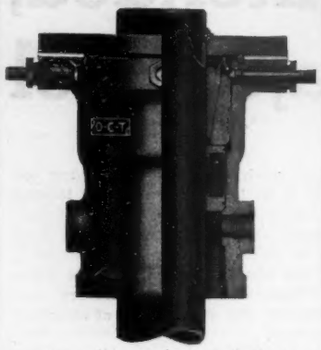
Adams & Bradley No. 1 Crain, in Gaines County, is extending the Seminole pool 3½ miles to the north

O-C-T

TYPE C-9-PS

SLIP SUSPENSION

CASING HEAD



Permits landing casing at any desired point. Permits drilling and running casing through blowout preventer equipment flanged above. Packing, slips, and slip bowl passes through blowout preventer to seat in body of head. Packing compressed by weight of casing. Hold-down screws aid in compressing packing. Available with or without welding flange, which holds casing down and effects auxiliary seal above slips. Test pressures up to 10,000 lbs.

OIL CENTER TOOL CO.

O-C-T

HOUSTON, TEXAS, U.S.A.

CABLE ADDRESS "OCANTOL"

"Sold Through Supply Stores"

Peerless...ONLY PERFECTED LINE OF BOTH WATER AND OIL LUBRICATED PUMPS

The complete Peerless line of both Water and Oil Lubricated Pumps meet every water requirement. Each type incorporates outstanding features that contribute to long life and maintained efficiency, such as water lubricated double bowl bearings, double-sealed bowls, hard chrome shaft bearing contacts on the water lubricated type, and many others. Write for new bulletin P-141 containing complete description.

Factories:

LOS ANGELES, CALIF., SAN JOSE, CALIF.
FRESNO, CALIF. • MASSILLON, OHIO

★ WATER OR OIL LUBRICATION

Peerless TURBINE PUMPS

FOOD MACHINERY CORPORATION

PERFORMANCE WITH ECONOMY

Among the Drilling

CARL B. KING DRILLING CO. of Dallas, Tex., on a farmout project from Forest Development Corp. of Abilene, has announced location for a scheduled 5,000-foot wildcat test 3 miles south of Abilene in Taylor County, West Central Texas. King Drilling Co. holds half interest in the 80-acre drill site and several scattered leases within the 3,000-acre block which Forest Development Corp. has been assembling for the past year. The test will be on land owned by the T. C. Anderson estate in Section 8, Lunatic Asylum Lands Survey. Derrick has been erected and the rotary is being moved onto the location. Owners plan to core the 1,900-foot lime pay zone producing in a well drilled nearby 23 years ago and continue to the 3,500-foot Ellenburger lime pay should the upper horizon prove nonproductive.

RHODES DRILLING CO. of Big Springs, Tex., has received a contract from Ungren & Frazier of Abilene for drilling a half mile outpost to the new Avoca Townsite oil pool opened last month by the Abilene operators in Jones County, West Central Texas. The well is No. 1 Hamilton & Cox Estate, on a 140-acre tract in Section 21, H.&T.C. Survey. Surface casing has been set at 120 feet and the test is drilling below 750 feet toward the Palo Pinto lime pay of the pool.

PERRY BROWNING of Wichita Falls, Tex., has contract for a 3,200-foot wildcat test in Fisher County, West Central Texas. It will be J. B. Baker, Jr., and Tom B. Medders No. 1 O. R. Burman, Section 4, W. E. Richardson Survey and near McCaulley. The test is on a 1,600-acre block assembled by G. J. Scholl of Wichita Falls. General Crude Oil Co. has several wells about a half mile northwest of the test and on the Mary Brown lease at the extreme south end of the Royston field.

HELMERICH & PAYNE DRILLING CO. of Tulsa has received a contract from Forest Development Corp. for the drilling of a new, deep wildcat in Stonewall County, West Texas. Materials are being moved in for No. 1 C. E. Boyd, northeastern part of the county and projected to 5,000 feet. It is staked in Section 45, Block D, H.&T.C. Survey, about 15 miles east of the new Carlisle pool which opened the first commercial production for the county last summer.

GRACE & WOODS of Wichita Falls, Tex., are drilling a wildcat of widespread interest in Foard County, North Texas. It is in the Red River Valley area and in the northwest corner of Section 455, Block A, H.&T.C. Survey. Test is Fleetwood & Kaufman No. 1 Owens, a contracted 4,500-foot test, which is drilling at about 3,000 feet and reported to be checking over 100 feet high on all important markers. The Canyon series is expected at around 3,750 feet and will be tested before completing contract depth. The operators are from Okmulgee, Okla., and a number of Oklahoma operators own acreage in the 5,000-acre block.

ENGLISH DRILLING CO. recently completed No. 2 Cobb-Covey, NE SW Section 11-5n-9w, Caddo County, Oklahoma, making 760 bbls. at a total depth of 3,391 feet.

NOBLE DRILLING CO., Tulsa, has been drilling No. 1 Smith in SE SW Section 26-5-8w for Carter Oil Co. in the old Chickasha gas field of Grady County, Oklahoma. Drilling is proceeding below a depth of 6,618 feet, preparatory to running 9⅝-inch casing. Northwest of Ardmore, this organization is drilling No. 1 Noble, NE SE Section 35-3s-1e, Carter County, Oklahoma. At a total depth of 4,110 feet 10¾-inch casing was cemented in the Woodford formation.

VIRGINIA DRILLING CO., S. A. Murphy and Web-Son and Royalty Co. No. 1 Clawson, a wildcat strike in SW NW Section 17-20-11w, Barton County, Kansas, swabbed 150 bbls. of 41-gravity oil in five hours in a production test from the Arbuckle dolomite at 3,299 feet, total depth. This gives Barton County a new oil pool. It has not been announced whether the well will be acidized.

BIG CHIEF DRILLING CO. No. 1 Woodrow, SE Section 34-15n-2e, extension test one location west of nearest production in the North Wellston pool, Lincoln County, Oklahoma, was preparing to run 7-inch about 60 feet in the Viola at 4,996 feet. The well will be carried to the Wilcox.

COOPER DRILLING CO., W. B. Winemiller and others are to drill a wildcat east of the Tonkawa field in Kay County, Oklahoma, district. The crew was digging cellar and pits at the location, No. 1 Caughlin, SE NE SW Section 30-25n-1e.

W. A. SNYDER, Tulsa, has been moving out rotary equipment at No.

H. C. SMITH ROCK BITS

INSURE INCREASED SPEED AND ECONOMY

H. C. SMITH ROCK BIT available in sizes 5⅝" up to and including 13"

Send for Folder or see Composite Catalog

H C Smith Oil Tool Co.

GENERAL OFFICES AND PLANT
P. O. Box 431, Compton, Calif.

Illinois Service:
BROWN-WALTERS CO.,
Centralia, Illinois

"There is no better rope"

Standco

NO-SMOKE

STANDCO BRAKE LINING

Nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 1940, Composite Catalog.

STANDARD BRAKE LINING CO.

Contractors

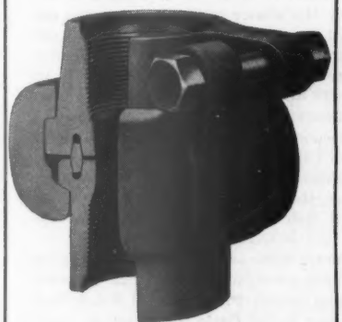
RED BALL CUTTING SERVICE

At the Head of the Table in Our Business

The RED BALL Cutting Service has consistently cut and recovered more pipe than all other cutting services combined in the territory where we operate.

J. S. Abercrombie Co.
21st FLOOR GULF BLDG.
HOUSTON - TEXAS

UNIBOLT
"Available Wherever There is Oil!"



EFFICIENT!

For example, the 2" size: Weighs 12 pounds; Test Pressure—6000 pounds; Safety Factor—7.3 (14.3 at 3000 pounds).

Interchangeable Parts.

UNIBOLT
(TRADE MARK REGISTERED U. S. PATENT OFFICE)
THE ONE BOLT COUPLING

THORNHILL-CRAVER CO., INC.
HOUSTON, TEXAS

1 Harris, NE NW SW Section 6-6-4e, in the St. Louis district of Pottawatomie County, Oklahoma, which has been drilled for Atlantic Refining Co. The well was drilled to the second Wilcox at 4,451 feet and was plugged back to 4,440 feet. Pumping equipment is to be installed. A swabbing test with a short line 1,200 feet off bottom made 165 bbls. in 24 hours. At Atlantic No. 1 Spaugy, SW SE NW Section 6-6-4e, this contractor is preparing to run 7-inch casing to a total depth of 4,485 feet. A drill stem test was attempted but no results were obtained. In the Konawa area of Seminole County, Oklahoma, this contractor is drilling below 1,912 feet at Atlantic No. 1 Atkinson, NW SW Section 17-6-6e.

O. P. JACOBSON, Tulsa, is bailing and testing at a total depth of 4,357 feet at Atlantic Refining Co. No. 1 Norvell, SW NW NW Section 21-7-6e, in the West Little River pool of Seminole County, Oklahoma. On reaching this depth the hole filled up with 2,600 feet of oil and 100 feet of salt water. A test showed no water and it was concluded the water was drilling water. According to the latest reports 3,600 feet of 40-gravity oil is standing in the hole.

ALLEN & MORRIS received contract from the Seaboard Oil Co. for No. 2 Wilson, to be drilled in the Riverside area, Nueces County, about 1½ miles from Stanolind Oil & Gas Co. No. 1 Clark, recently completed for a gas well. In the meantime, drilling continues at the La Rosa field, Refugio County, where five rotaries are operating for Geophysical Service, Inc., Phillips Petroleum Co., and Shield Oil Co.

CRON & GRACEY are moving a rotary to Waller County, where a 6,500-foot test will be drilled for Providence Oil Corp. The test is located about 10 miles north of Brookshire, on the Ida Le Muske lease in the James Perry Survey.

N. W. HUNTER abandoned his No. 1 Jerichew, a wildcat in Brazos County, and the rig is being moved to the Blue Ridge field in Fort Bend County, where a deep test will be drilled on the north flank of the structure.

SMITH & McDANNALD are making a production test on Tide Water Associated Oil Co. No. 1 Roy, one-half mile southwest of production at the Eureka field, Harris County. Casing was perforated at 7,944-49 feet, and the well flowed pipe line oil for several hours before it began to show salt water. The sand is about 200 feet lower than the regular pay. Six other operations are reported in the Withers, Hardin, Dickinson, Clear Lake, and Jennings fields for themselves, Pure Oil Co., Stanolind Oil & Gas Co., and Shell Petroleum Corp.

RUTHERFORD DRILLING CO. opened a distillate field 5 miles east of the La Rosa field, in Refugio County, with the completion of its joint test with Barnsdall Oil Co. on the Neiman lease, in the Estaban Lopez Survey. The hole was drilled to a total depth of 6,505 feet, and the well was completed for an initial production of 3,250,000 feet of gas and an unestimated amount of distillate per day, flowing through a one-quarter inch choke.

VIRGINIA DRILLING CO. set 247 feet of 10-inch casing at No. 1 Schlocktermayer, Section 7-21-11w, in the Smith-Snider district of Stafford County, Kansas.

KERR-LYNN & CO., Oklahoma City, is drilling below 3,750 feet for Mid-Continent Petroleum Corp. at No. 3 Koh Dot, NW SE SE Section 36-7n-4e, in the St. Louis area of Pottawatomie County, Oklahoma.

MAC & STAUFFER, Tulsa, are drilling No. 1 Ochs, NW SW NE Section 35-15s-14w, for Mid-Continent Petroleum Corp. in the new area near the old Ochs pool, Russell County, Kansas.

SUMMIT DRILLING CORP., Tulsa, is drilling below 3,350 feet at Mid-Continent Petroleum Corp. No. 1 Tiger, NE SW SE Section 12-6-5e, in the Grayson pool, Seminole County, Oklahoma.

J. E. SMITH, Houston, Tex., is drilling a wildcat for a syndicate in Montgomery County, Texas. A 9-inch hole has been carried below 3,700 feet and will be carried on down to deeper horizons.

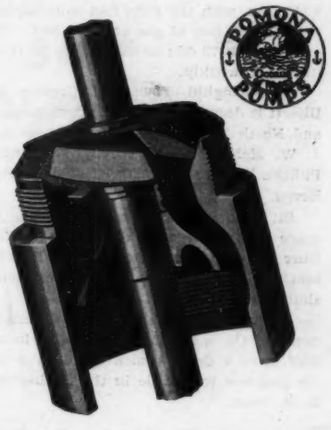
L. A. FARRIS, JOHN F. DUWE, Wichita, Kans., and associates are drilling No. 1 Kimminau, a wildcat in the NE NW SW of Section 12-30-9w, in Kingman County, Oklahoma. The crew has been bailing the hole preparatory to drilling out cement plug at 4,576 feet, the top of the Viola lime. The hole is bottomed at 4,592 feet in the same formation. Prior to cementing casing, a survey revealed considerable gas and some oil.

REED'S 'B-R' DRILLING BIT WITH WIRE LINE RETRACTABLE CORE BARREL

REED 'B-R' Drill Collar and 3-Blade Drilling Bit with Core Barrel in position

HARD FORMATION HEAD (INTERCHANGEABLE WITH SOFT FORMATION HEAD)

REED ROLLER BIT CO.



Here's a Pump With a SOUND HEART . . .

Look at a Pomona semi-open impeller. See how the vanes are curved to give the best and most positive "bite" to the water. Note the ample streamlined passages in the bowls.

Here is the heart of the pump. It has a sound constitution—good for years of trouble-free action without doctoring and dosing.

Pomona Pumps are your best insurance against "down time."

POMONA
Water-Lubricated
TURBINE PUMPS

Eastern Field Report

By STAFF CORRESPONDENT

Holidays Slow Down Work in Old Lower Eastern Field

PITTSBURGH, Pa., Jan. 2.—Completions were reduced in the lower eastern fields, due to severe weather conditions. Fifteen operations were reported, of which four were dry holes, nine gas wells, and two producers with an initial production of 45 bbls. a day. There were several fair gas wells in the Oriskany gas field in Kanawha County, West Virginia.

In Southeast Ohio, Wehrle Co., on the J. E. McCracken and others lease, in the NW quarter Section 12, Hopewell Township, Licking County, drilled into the Clinton sand to 3,095, and the well flowed 30 bbls. the first day after shot.

In Harrison County, Ohio, the Columbian Carbon Co. is drilling in the shale at 4,092 feet on the George D. Miller farm, in Section 23, German Township. This is to be an Oriskany test, with the Corniferous expected 600 feet deeper.

SOUTHWEST PENNSYLVANIA

In Greene County, Pennsylvania, Equitable Gas Co. completed a gas well on the T. J. Huffman farm, in Washington Township, at 2,711 feet. The Fifty-foot sand was at 2,668 feet, with 514,000 feet of gas showing at 2,708 feet. In Greene Township the same company deepened No. 1 S. S. Iams to 3,123 feet, with the Thirty-foot sand at 3,090 feet and 176,000 feet of gas at 3,092-95 feet.

In Monongahela Township, Greene County, Monongahela Oil & Gas Co. deepened No. 2 Vance Heirs to 2,177 feet, with the Fifty-foot sand topped at 2,151 feet and 134,000 feet of gas at 2,155 feet. This company is drilling at 2,473 feet on the George W. Hixenbaugh farm, Greene Township.

In Springhill Township, Greene County, M. W. Bissett is deepening No. 1 Maxwell Riggs on Knob Run, and North Eastern Oil & Gas Co. is deepening No. 1 J. W. McNichols. In Wayne Township, Cummins & Phillips have reached 3,040 feet deepening No. 1 W. E. Kerns.

In Monongahela Township, Greene County, Brummage & Brummage are drilling at 810 feet on the S. G. Durr farm. In Morris Township, C. H. McVay and others reached 175 feet on the Elmas Laughman farm and are shut down.

In Center Township, Greene County, Carnegie Natural Gas Co. is drilling at 2,072 feet in No. 4 J. H. Orndoff after a delay cementing a cave at 1,921-51 feet. No progress was made in the fishing job in the No. 2 G. M. Scott.

Washington County

In North Strabane Township, Washington County, Keystone Drilling Co. was drilling at 2,260 feet on the Frank Grego farm, with Gantz sand topped at 2,216 feet and 50,000 feet of gas at 2,218-23 feet. In South Franklin Township, Manufacturers Light & Heat Co. started drilling on the C. T. Coon farm.

In Amwell Township, Equitable Gas Co. topped Salt sand at 1,585 feet on the Porter E. Herrod farm and had 336,000 feet of gas at 1,588-90 feet, which is being tested. In Chartiers Township the second test on the Cannonsburg Iron & Steel Co. on its fee is down 1,810 feet.

Deep Tests

On Chestnut Ridge, in Fayette County, no additional work on the Peoples Natural Gas Co.'s test on the Piedmont Coal Co. land, in South Union Township, was done. The rotary drilling equipment is being removed and the rig torn down. The final gauge was 2,600,000 feet a day, but this may be increased with some additional work. In this township New Penn Development Co,. William E. Snee and others, are drilling at 6,560 feet on the Indian Creek Coal & Coke Co. lease. In North Union Township, Wasson & Co. had reached 6,829 feet on the J. H. Sorg farm, or within about 100 feet of the top of the Onondaga.

On Chestnut Ridge, in Springhill Township, the L. J. Houze Convex Glass Co. is cleaning out wire and caving in the fishing job on the Paul Dunham farm. There are still 50 feet of cavings on top of the tools.

In Beaver County, Hanley & Bird were drilling at 3,700 feet on the S. Calvin farm in South Beaver Township. In Mercer County, Carnegie Natural Gas Co. is drilling at 4,652 feet in a white slate formation on the A. S. McCullough farm in Jefferson Township, with the hole caving slightly.

WEST VIRGINIA

In Roane County, West Virginia, Guy Boggess completed a well on the William R. Boggess farm in Reedy district, in the Berea sand at 2,371 feet and it is good for 15 bbls. a day.

In Cabell County, Nida Gas Co. completed a second well on the C. L. Ritter and J. L. Perry lease in Guyandotte district, at 2,987 feet. Brown shale lay at 2,545-2,960 feet. The well gauged 336,000 cu. ft. a day after shot.

In Calhoun County, Bruce Ferrell, Jr., drilled a small well on the Fred Riggs farm in Lee district to 2,000 feet. Big Injun lies at 1,885-1,960 feet, with a show of gas at 1,890-95 feet, and a show of oil and gas at 1,930-35 feet, and a show of oil at 1,955-60 feet. There was not enough gas to test and only about one-fourth barrel of oil a day.

In Gilmer County, A. E. Ellis and others completed a second well on the Ola D. Ware farm in DeKalb district at 2,099 feet as a gas well. Big Injun at 1,995-2,095 feet yielded 558,000 cu. ft. of gas a day. In this district, W. H. Satterfield completed a test on the Gertie Ellyson farm at 1,900 feet as a gas well gauging 67,000 cu. ft. a day, from Big Injun at 1,845-57 feet.

In Kanawha County, Cabin Creek district, Winifrede Co. drilled a dry hole on the Bedford tract with the Big lime at 1,918-2,154 feet; Big Injun 2,154-85 feet, and Weir 2,258-2,410 feet.

In Ritchie County, Moats and Richards test on the B. M. Cowell farm in Grant district drilled through the Squaw sand to 1,938 feet and was a dry hole.

In Roane County, Harry Anderson drilled a dry hole on the J. W. White farm in Smithfield district to 1,988 feet.

Oriskany Gas Field

Three fair gas wells were completed in the Elk-Poca Oriskany gas field in Kanawha County. In Poca district, the United Fuel Gas Co. completed No. 4796 W. J. Glass at 5,192 feet. Total gauge was 14,140,000 cu. ft. of gas a day. In this district, United Carbon Co. test on the William Moss and others farm was completed at 4,950 feet with the Oriskany topped at 4,926 feet and a final gauge of 11,408,000 cu. ft. of gas a day.

In the same district, Mullins Gas Co. shut down at 1,935 feet on the William Ernest Fisher farm after a gas strike in the Big lime topped at 1,873 feet and a gauge of 9,250,000 cu. ft. of gas a day.

In Poca district, United Fuel Gas Co. made a location for a test on the Janey Gibson farm.

Outside Deep Tests

In Jackson County, Godfrey L. Cabot, Inc., is drilling at 3,750 feet on the Walker and Jones lease in Washington district. In Ripley district, Everett Starcher and others have rig up on the R. R. Boggess farm, and a location made on the Grady F. Boggess farm. In Ravenswood district, Joe Rubin and N. P. Johnston has rig up on the D. P. Curry farm.

In Pleasants County, the Columbian Carbon Co. is drilling at 4,700 feet in the test on the Giles Hammatt farm in Grant district. In Harris district, Wood County, the test of the Potter Development Co. on the W. H. Orem farm is underreaming at 5,576 feet.

New Work

In Cabell County, the Elkins Gas Co. has started drilling on the Leonard Paugh farm in McComas district. In Guyandotte district. C. V. Meabon is rigging on the C. and H. Edgar farm.

In Calhoun County, Richards and Connolley are drilling in on the Amos Sturms farm in Sherman district. Ivy Gainer and others are down 1,594 feet on the Stump Heirs lease, same district. In Lee district, Everett Starcher and others had reached 675 feet on the Anna Slider farm, and 1,760 feet on the Clay Starcher farm.

Clay County

In Clay County, Otter district, the Pittsburgh & West Virginia Gas Co. is drilling at 2,210 feet in No. 7660 W. H. Smith and others; at 2,540 feet in No. 7663 Ed L. Hyre; and at 1,844 feet in No. 7661 A. M. Mollahan in Birch district, Braxton County. In Court House district, Lewis County, this company is down 824 feet in No. 7650 J. B. Brannon farm.

In Barbour County, Hope Natural Gas Co. is drilling at 4,024 feet in No. 7840 on the Annette Riley farm in Elk district. In Nicholas County, this company reached 905 feet in No. 7822 C. & H. Corp., in Jefferson district and shut down.

In Gilmer County, Massey & Jarvis are drilling at 450 feet on the Milton Norris Heirs in DeKalb district. McKnight and Whiting are rigging up on the A. B. and J. D. Vannoy farm. L. E. and W. H. Mossor have a rig up on the S. S. Riddle farm. J. A. Tierney has a rig standing on the G. Hart farm.

In Lincoln County, R. H. Adkins is moving in on the Osa Lovejoy farm in Jefferson district. In Sheridan district, the Sweetland L. & M. Co. is drilling at 875 feet in the Chelcy McCallister test. In Washington district, the Harvard Gas Co. is fishing for tools at 3,660 feet in No. 6 Lincoln Land Mineral Co. In Logan County, the Boone County Coal Corp. is down 3,227 feet in its No. 13 fee in Logan district.

In Pleasants County, the Adlai Oil & Gas Co. made a location for a second test on the C. P. and Delphia Simonton farm in Lafayette district, elevation 909 feet. In Jefferson district, Mancil Kelley and others have started drilling on the Pauline Hammett farm. In McKim district, F. R. Ball is rigged up on the L. E. Fleming farm.

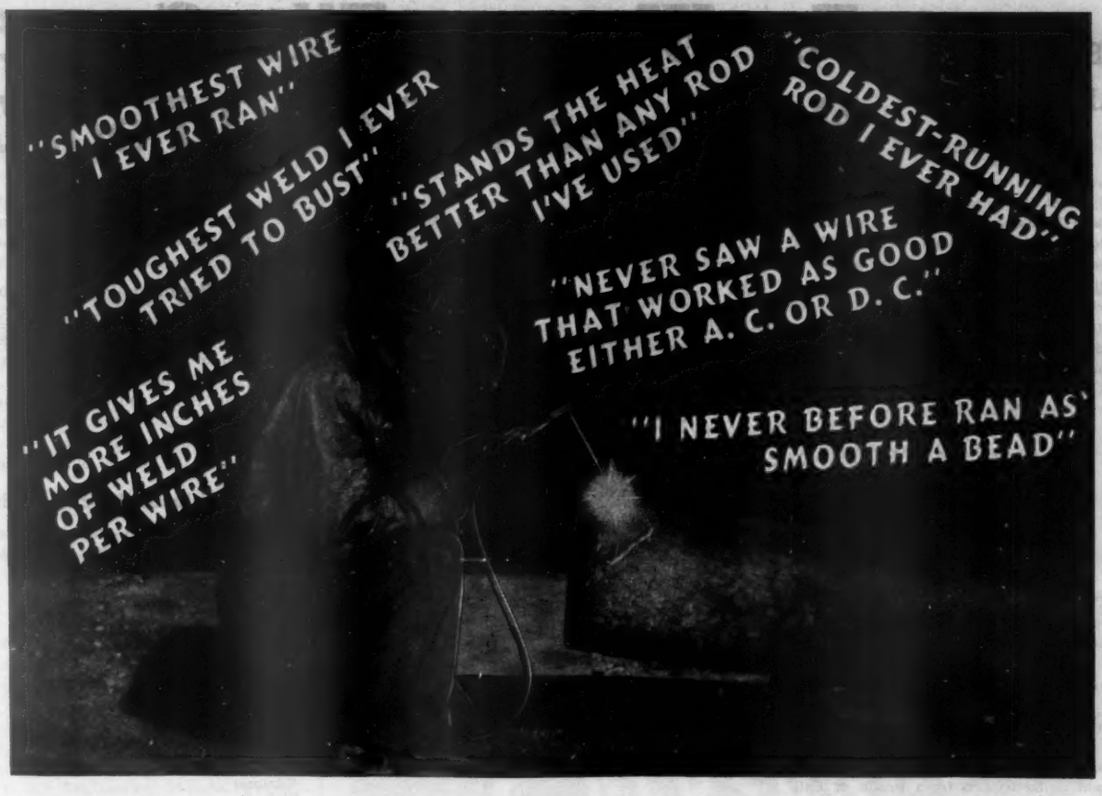
In Ritchie County, Moats and Barker made a location on the W. S. Fowler farm in Union district, elevation 962 feet. In Murphy district, Pittsburgh Oil & Gas Co. is drilling at 1,830 feet in the Coyle Heirs test. In Grant district, the S. R. S. Oil Co. is down 1,360 feet on the C. R. Bradley farm. In Clay district, McBurney and others reached 1,300 feet and shut down on the Noah Farley Heirs land.

Tyler County

In Tyler County, Don E. White and others are drilling at 1,100 feet on the Minnie Johnson farm in Union district. Here, J. E. Haught shut down at 700 feet on the Jacqueline Thorn farm.

In Wayne County, the United Fuel Gas Co. is drilling at 400 feet in No. 4824 A. J. Fry farm, Union district. In Lincoln district, Kentucky West Virginia Gas Co. is down 1,550 feet on the W. B. Ferguson farm. In Ceredo district, Sinclair Glass Co. shut down at 2,417 feet for a shot in the Mary F. Brown test.

In Wetzel County, W. H. Swisher and Evart Hughes made a location on the Eunice Cannon lots in Proctor, Proctor district, elevation 641 feet. On Whetstone Run in this district, J. H. Ferrell made a location on the Cely Montgomery farm.


"SMOOTHEST WIRE I EVER RAN"
"TOUGHEST WELD I EVER TRIED TO BUST"
"STANDS THE HEAT BETTER THAN ANY ROD I'VE USED"
"COLDEST-RUNNING ROD I EVER HAD"
"NEVER SAW A WIRE THAT WORKED AS GOOD EITHER A. C. OR D. C."
"IT GIVES ME MORE INCHES OF WELD PER WIRE"
"I NEVER BEFORE RAN AS SMOOTH A BEAD"

Listen to what the welders say about **PAGE Hi-Tensile "G"**

Ask any welder who has run Page Hi-Tensile "G" what he thinks of the rod. He'll tell you it's remarkably fast, and gives a bead of surprising smoothness and unusually high ductility. He'll tell you it's a very quiet rod, with little spatter. Whether he has used it on production work, maintenance work or construction work, he will have found it practical under all operating conditions.

Get in touch with your local Page distributor. He has information you should have about Hi-Tensile "G" and other Page welding electrodes.

BUY ACCO QUALITY *in Page Welding electrodes, Page Chain Link Fence, Tru-Lay Preformed Wire Rope, Reading-Pratt & Cady Valves, Campbell Abrasive Cutting Machines, American Chains (Welded and Weldless), and Wright Hoists.*

PAGE STEEL AND WIRE DIVISION
MONESSEN, PENNSYLVANIA

AMERICAN CHAIN & CABLE COMPANY, Inc.

AMERICAN CHAIN DIVISION • AMERICAN CABLE DIVISION • ANDREW C. CAMPBELL DIVISION • FORD CHAIN BLOCK DIVISION • HAZARD WIRE ROPE DIVISION • HIGHLAND IRON AND STEEL DIVISION • MANLEY MANUFACTURING DIVISION • OWEN SILENT SPRING COMPANY, INC. • PAGE STEEL AND WIRE DIVISION • READING-PRATT & CADY DIVISION • READING STEEL CASTING DIVISION • WRIGHT MANUFACTURING DIVISION • IN CANADA: DOMINION CHAIN COMPANY, LTD. • IN ENGLAND: BRITISH WIRE PRODUCTS, LTD. • THE PARSONS CHAIN COMPANY, LTD. • *In Business for Your Safety*

Oklahoma Operations

By
DAL DALRYMPLE

Far Western Ellis County Is Promised a 6,000-Foot Test

The year closed in Oklahoma with no outstanding events in the closing week. A 500-bbl. well completed by T. P. McAdams in the SE NE Section 36-17-9 in the old Kelleyville district of Creek County, was of interest. The well produces from Dutcher sand topped at 2,712 feet, and the oil is said to have tested 33 gravity, which is high for Dutcher sand in that county. A mile and a half southeast of the McAdams well the Midco Oil Corp. found production in two sands, Bartlesville and Red Fork, on the same lease. No. 1 Leverett, in NE NW Section 7-16-10, is a 25-bbl. Bartlesville well at 2,354 feet, and No. 2 Leverett, SE NE NW Section 7, is a 30-bbl. Red Fork sand well at 2,200 feet. Notwithstanding that Creek County has been producing oil for over 30 years and has seen the drilling of thousands of wells, it is still one of Oklahoma's most active oil counties, and stands sixth in the state in current production, being exceeded only by Oklahoma, Seminole, Pontotoc, Osage, and Pottawatomie counties.

An important test is being started in far western Oklahoma by J. E. Elliott of Shattuck, Okla., who was moving in rig and material at the week-end for No. 1 Fred Teton, in SE SE NE Section 35-20n-25w, near the town of Arnott in Ellis County. The well will be drilled to 6,000 feet if necessary for a thorough test, Mr. Elliott says. It is on a large block of acreage and Elliott is said to be backed by a group of Californians. In 1914 a well was drilled to 1,714 feet in Section 35 but it was junked and abandoned in what is said to have been a sandstone formation. Mr. Elliott estimates that Wilcox sand will be found at about 2,000 feet in the new test.

Pottawatomie County

Neustadt and others No. 2 Bruno, NE SE SE Section 31-7-5, found dolomite at 4,130-47 feet, total depth, and pumped 176 bbls. of oil in 24 hours.

Alma Oil Co. No. 5 Smith, NW SE NE Section 32-7-5, St. Louis field, Pottawatomie County, had dolomite at 4,040-64 feet, total depth, pumped 575 bbls. of oil in 24 hours, with 60 bbls. of water, and was completed.

Magnolia Petroleum Co. No. 1-A Tull-Fyke G, NW NE NE Section 29-7-5, pumped 40 bbls. of oil and 10 bbls. of water in 24 hours from Calvin sand at 2,848-68 feet, total depth.

F. W. Cooper Drilling Co. No. 1 Neighbors, NW SW SW Section 29-7-5, found dolomite at 4,154 feet, was bottomed at 4,199 feet, and pumped 80 bbls. of oil and 70 bbls. of water in 24 hours.

Magnolia Petroleum Co. No. 3 Jones C, NW SW NE Section 18-7-4, was dry and abandoned at 3,965 feet, total depth.

McIntosh-Okfuskee-Tulsa

J. Penrod Co. No. 2 Barnett, SE cor. Section 19-12-14, McIntosh County, found Dutcher sand at 2,154-64 feet, total depth, and produced 750,000 feet of gas daily.

Burke-Greis Oil Co. No. 1 Replogle, NE SW NE Section 26-11-8, Okfuskee County, was dry and abandoned at total depth of 3,548 feet.

Weber and others No. 2 Morman, C SE NW Section 15-16-12, Tulsa County, had Wilcox sand at 2,434-48 feet, total depth, and was dry and abandoned.

Creek County

L. K. Marrs No. 1 Wilson, NE cor. Section 34-18-8, Creek County, pumped 48 bbls. of oil in 24 hours after a shot and was completed at 3,610 feet, total depth.

Central Commercial Oil Co. completed a 70-bbl. well at No. 1-A Ricks, SE cor. Section 16-17-9, producing from Bartlesville sand at 2,485 feet, total depth 2,546 feet.

L. B. Jackson No. 1-M Bittle, SE NE NW NW Section 11-15-10, pumped 2 bbls. of oil daily at 2,273 feet, total depth.

Vierson & Vierson No. 1 Yargee, SW cor. Section 13-14-10, was dry and abandoned at 3,265 feet, total depth.

Seminole-Pontotoc Counties

Winona Oil Co. and others No. 1 Willmott, NW NW SW Section 8-9-6, East Earlsboro area, Seminole County, failed to find production and was dry and abandoned at 4,266 feet, total depth.

Sinclair Prairie Oil Co. No. 4 Starrett, SW NW NE Section 21-5-5, East Bebee area, Pontotoc County, found Viola lime pay at 2,529 feet, total depth 2,575 feet, and pumped 135 bbls. of oil in 24 hours.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending December 31, and for the preceding week was as follows:

	Barrels	
	Dec. 31	Dec. 24
Allen	5,975	6,050
Billings	5,250	5,200
Burbank	7,200	7,225
South Burbank	9,200	9,175
Balance Osage	15,600	15,600
Blackwell district	4,000	4,025
Bristow-Slick	6,775	6,450
Chandler	1,900	1,900
Crescent	3,875	3,550
Cromwell	3,100	3,125
Cushing-Shamrock	10,200	10,175
Duncan district	4,250	4,275
Edmond	4,750	4,850
Fish	2,775	2,875
Fitts	32,375	36,425
Jesse	2,500	2,550
Graham-Fox	4,675	4,875
Gray	850	825
Healdton	9,300	9,350
Hewitt	3,450	3,475
Keokuk	3,700	3,725
Konawa	1,225	1,200
Lucien	8,100	8,000
Moore	4,125	4,475
Oklahoma City	97,425	94,125
Olympic	3,725	3,750
Ramsey	1,250	2,450
Sasakwa	1,325	1,300
Sholem-Alechem	2,625	2,650
Seminole district:		
Bowlegs	7,225	7,175
Carr City	2,775	2,750
Dora	4,600	4,625
Earlsboro	4,100	4,050
South Earlsboro	450	450
East Earlsboro	3,750	3,725
Little River	6,125	5,950
East Little River	750	750
Maud	875	750
Mission	1,325	1,300
Seminole	7,325	7,225
East Seminole	1,500	1,475
Searight	2,225	2,250
Total Seminole	43,025	42,475
St. Louis-Pearson	23,825	23,750
Tatums	2,050	2,025
Tonkawa-Garber-Thomas	4,100	4,125
Wewoka	2,050	2,075
Yale-Jennings	3,625	3,750
Other pools	81,750	82,000
Total Oklahoma	421,925	423,850

Lincoln-Pawnee Counties

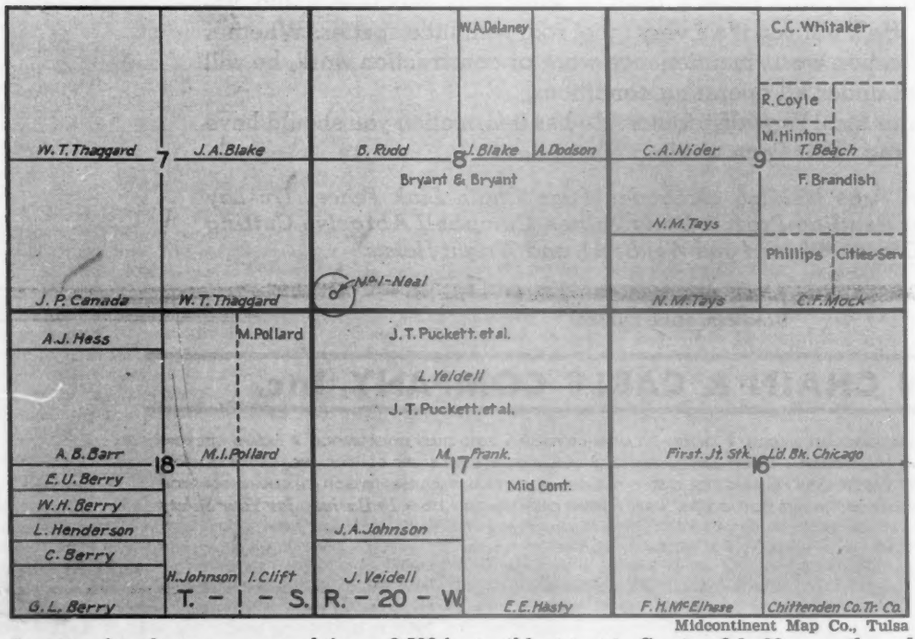
Wilcox Oil & Gas Co. No. 18 Sac and Fox, NW NW SW Section 15-14-6, Sac and Fox pool, Lincoln County, found Prue sand at 2,925 feet, total depth 3,033 feet, was shot and pumped 112 bbls. of oil in 24 hours.

McMillan Baze No. 1 Carter, NW SW NW SE Section 25-20-9, Pawnee County, had Mississippi lime at 2,192 feet, was bottomed at 2,400 feet, acidized and pumped 5 bbls. of oil daily.

Roy Starr Oil Co. No. 1 McKensie, SW SW NE Section 13-18-3e, Payne County, was dry and abandoned at 4,195 feet, total depth.

Osage County

Olson Drilling Co. No. 1 Osage, C NW NW Section 24-26-4, Osage County, flowed 55 bbls. of oil in 24 hours, accompanied by 1,800,000 feet of gas, from Skinner sand at 3,095-3,115 feet, total depth. It was



Midcontinent Map Co., Tulsa

Location has been announced for a 3,500-foot wildcat test in Section 8-1s-20w, north and east of Elmer in Jackson County, southwestern Oklahoma

drilled deeper without success and plugged back to the Skinner formation. This well is west of the Burbank field and in an old area that has had small production but has not been active for some time.

Joe Carper No. 9 Osage, SE cor. Section 8-21-9, found Buzzard sand at 270-295 feet, total depth 305 feet, and pumped 5 bbls. of oil in 24 hours.

E. J. Machant and others No. 6 Osage, NW NE NW Section 19-23-9, was dry and abandoned at 2,230 feet, total depth, in sand.

Southern-Southwestern

H. A. George No. 1 Breedlove, NW cor. Section 25-1n-8, Clarita area, Coal County, was abandoned at 525 feet, total depth.

McGran Oil Co. No. 27 Stewart-Hawks, NE NW NW Section 4-4s-3w, Healdton field, Carter County, was an abandoned location.

Ray Stephens, Inc., No. 1 Farwell, NE NE SW Section 27-6-10w, Cement field, Caddo County, topped sand at 5,425 feet, was bottomed at 5,728 feet, and produced 3,000,000 feet of gas daily.

T. H. McCasland No. 1-A Horton, SE SE NW Section 8-3n-5w, Knox pool, Grady County, had Pontotoc pay at 2,738-85 feet, total depth, and flowed 105 bbls. of oil in 24 hours.

J. G. Beard No. 9 Willis, NE NE NW Section 26-2s-6w, Woolsey pool, Stephens County, had a slight showing of oil in sand at 1,695-1,723 feet, but the hole filled with water and it was abandoned at 1,850 feet in shale.

Same operator's No. 10 Willis, NW NE NW Section 26-2s-6w, was an abandoned location.

Rips-Ungerman No. 7 Penniston, SW NE SW Section 16-7s-5w, Seay field, Jefferson County, was abandoned at 876 feet, total depth.

New Operations

Four new Oklahoma wildcats were reported. H. L. Hurst No. 1 Rooney, NE NE SW Section 26-13-3e, about 6 miles northwest of Meeker in southern Lincoln County, was a cellar. Bryant & Bryant and others No. 1 Neal, SW cor. Section 8-1s-20w, was location for a wildcat north and east of Elmer in Jackson County, the test to be carried to 3,500 feet. Hughes and others No. 1 Vittitoe, C NE SE Section 11-5s-4e, Marshall County, an old well bottomed at 7,110 feet, was swedging casing preparatory to deepening; this will be the fourth time this old wildcat has been deepened after having been shut down for long periods. Cooper Drilling Co. No. 1 Caughlin, SE NE SW Section 30-25-1e, northeast of the Tonkawa pool in Kay County, had dug cellar and pits.

In Seminole County: Hall, Troup & Moore No. 4 Snyder, SW NE NW Section 4-6-6, Dora pool, drilling below 250 feet; Weldon W. Hall No. 1 Cheparney, NE SW SE Section 2-8-6, location; same operator's No. 1-A Cully, NW cor. Section 11-8-6, Bowlegs area, location.

In Pottawatomie County: Magnolia Petroleum Co. No. 2 Fyke A, SE SW SE Section 20-7-5, St. Louis field, cellar and pits; Helmerich & Payne No. 2 Billington, SW SE SW Section 31-7-5, cellar and pits; Alma Oil Co. No. 2-A Rhodd, SW NW SE Section 32-7-5, building rig.

In Muskogee County: J. R. Parks No. 6 Hildebrand, NW NE SE Section 17-14-19, rigging up machine.

In Okmulgee County, E. M. Granfield No. 7 Sells, CNL NW SW Section 9-14-15, machine; Wells and others No. 1 Fisk, SW NE SE Section 25-10-11, machine.

In Tulsa County: Holmes & Lange No. 4 Easley, NE SW NW Section 7-19-10, shut down at 960 feet.

In Lincoln County: Wilcox Oil & Gas Co. No. 16 DeLozier, SW cor. Section 10-14-6, and same operator's No. 22 Sac and Fox, NE SE SE Section 16-14-6, cellar and pits.

In Payne County: Mid-Continent Petroleum Corp. and others No. 4 Brandon, NW SE NE Section 13-18-1e, cellar and pits; same operators' No. 7 Ramsey, NW SE NW Section 18-18-2e, cellar and pits; Stanolind Oil & Gas Co. and others No. 1 Walters, SW SW NE Section 18-18-2e, location.

In Creek County, Sand Springs Home No. 1 Endicott, NE NE SE Section 24-19-7, rigging up standard tools; E. Shamblin No. 2 Hargoche, NE cor. Section 21-17-9, moving in machine; Central Commercial Oil Co. No. 2 Ricks, NE SE SE Section 16-17-9, location; same operator's No. 2-A Bruce, NW SW SW Section 15-17-9, moving in tools; Bert Swift No. 1 Lamp, SE NW NE Section 10-18-8, drilling below 975 feet; Gled Oil Co. No. 1 Escoe, SE cor. Section 27-18-8, an old well bottomed at 1,818 feet, cleaning out; Burke-Greis Oil Co. No. 1-B McMeehan, SW NW NW Section 7-18-9, total depth 1,702 feet, running 8-inch casing.

In Stephens County, George R. Pace No. 16 Payne, SW NE NW Section 28-2s-7w, drilling below 820 feet.

In Caddo County: J. B. Nichlos No. 2 Royce, SE SW NE Section 12-5-9w, an old well bottomed at 3,066 feet, rigging up to deepen; Magnolia Petroleum Co. No. 4-B Hackey, SW NW NW Section 11-5-9w, an old well bottomed at 2,400 feet, building derrick, to deepen.

In Beckham County, Fred Coogan No. 2 Neal, C SW NW Section 10-9-25w, Erick pool, pits.

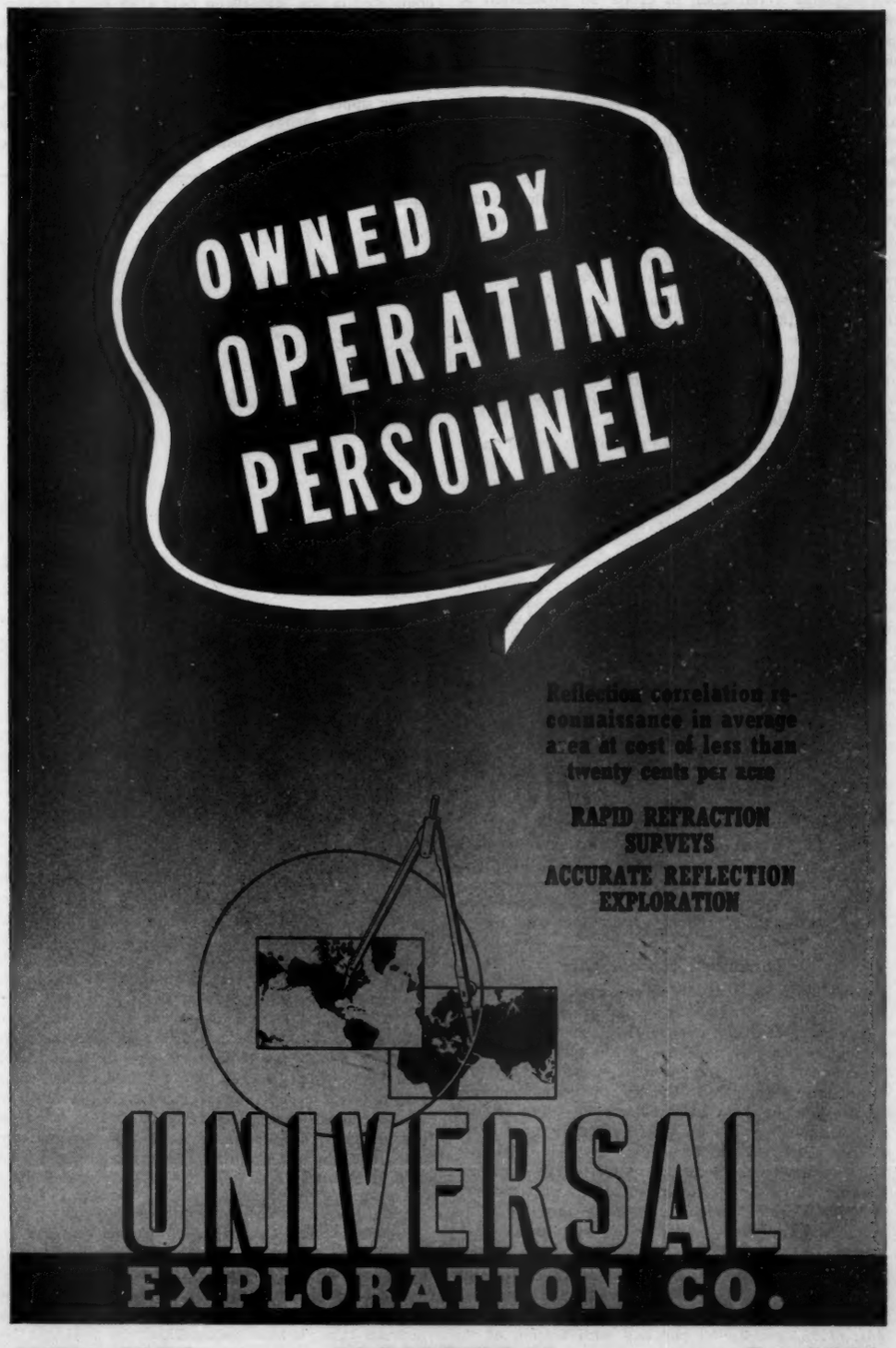
Arrangements Completed to Market Brownsville Gas

CHATHAM, Ontario.—Arrangements have been made by Central Pipe Line Co. for sale of part of its natural gas production in the Brownsville field to the Dominion Natural Gas Co. The Central company has built a second purification plant on the George W. Berdan property in Lot 1, Concession 10, Bayham Township. The plant, costing around $18,000, will handle up to 25,000,000 cu. ft. a day, employing the lime process. The company has laid about 6½ miles of 8-inch and 10-inch line to deliver gas to the Dominion company's main transmission line at a point near Tillsonburg.

The Central Pipe Line Co. already has a smaller lime process purification plant at Springfield, handling gas from the Brownsville field for its own customers in Springfield, Aylmer and Vienna.

Gasoline Vendors Licensed

REGINA, Saskatchewan.—Effective January 1, all gasoline vendors are required to obtain licenses from the Saskatchewan tax commission before they can sell any type of colored gasoline. Sale of purple tax free gasoline, for farmers, begins on that date.



California Field Report

Lessened Foreign Markets Force Drop in Production

By
L. P. STOCKMAN

LOS ANGELES, Calif., Jan. 2.—California operators in a period of about 10 days have reduced crude oil production approximately 40,000 bbls. per day and thus started off 1939 with a daily output about 75,000 bbls. below that at the beginning of 1938. Maximum effectiveness of the present curtailment program which contemplates a reduction of crude oil production to 600,000 bbls. per day has not yet been reached, but peak curtailment should be attained within several days. In addition to the 30,000,000 bbls. of crude and refined oil put into storage in 1938, the outlook for the new year, as far as demand is concerned, is not any too favorable. Indications point to a probable decline of about 20 per cent in shipments of California petroleum to Japan due to replacement with Mexican oil, and crude imports from other foreign countries into Japan and China. Fuel oil and Diesel sales on the Pacific Coast were at a low ebb during 1938 and for 6 of the first 11 months gasoline sales in California were lower than during the comparable month of 1937. During November, 1938, the latest data available, the California State Board of Equalization reported a distribution of 137,378,641 gallons of gasoline which returned to the state $4,118,812.05, or 2.12 per cent below the $4,208,436.21 assessed for the same month of 1937. The November income from the gasoline tax was substantially below that for October when $4,540,166.10 was collected.

Crude oil buyers, both large and small, are sanguine over the outlook for the new year due to the almost unanimous response of crude oil producers in reducing production to a minimum, as they believe this will prevent any disturbance in the price structure. There is a possibility that crude oil production may drop slightly below 600,000 bbls. per day for a short period due to the complete shutdown of production activities in the Lake View section of the Midway-Sunset field during the first 10 days of January. Production is resumed on the eleventh day of each month. Operators in Lake View have adopted this method of curtailment instead of attempting to regulate production daily, and for the several months they have been suspending production activities the last two days of each month in addition to the first 10 days of each month. A few fields are still out of line as far as production is concerned, notably Ventura Avenue, Huntington Beach, Long Beach, Montebello, Rosecrans, Torrance, Santa Fe Springs, and Wilmington, but the various field committees are still actively at work and may effect additional curtailment as time goes on. The objective of 600,000 bbls. daily is not expected to balance supply and demand, but will alleviate a distressing condition.

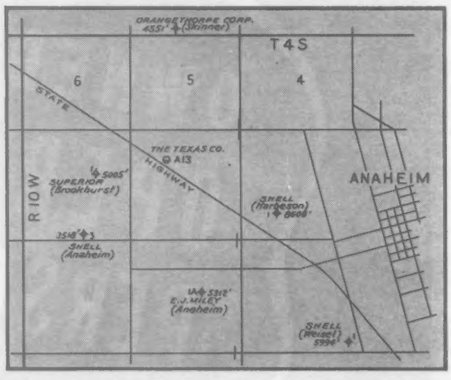
Torrance—Harbor City

During the past few weeks operators have been centering their activities in the area east of the Lomita section of the Torrance field where a new accumulation has been developed in the vicinity of 236th Street and Esheiman and extending southward to 240th Street. Ray Wilson No. 1 Lomita was completed flowing 310 bbls. of clean 26.5-gravity oil daily from 5,152 feet, and Woolner Oil Co. No. 2 finished flowing 160 bbls. of clean 26.2-gravity oil per day from 5,131 feet. No. 1 Lomita has perforations at 4,804-5,149 feet while Woolner Oil Co.'s well is perforated at 4,809-5,126 feet. Both wells were brought in flowing through 40/64-inch beans and show relatively low pressures.

Kern Oil Co. No. 1-A Madden, located at 235th Street and Narbonne, tanked 416 bbls. of 26.3-gravity oil from 5,090 feet in a 25-hour production test. D. & W. Oil Co. No. 4 Lomita was completed flowing 182 bbls. of 26.2-gravity oil per day with bottom of the hole at 5,137 feet. In the Harbor City area, south of the Lomita section and a separate accumulation, Richfield Oil Corp. completed No. 1 Capitol pumping 151 bbls. per day from 5,235 feet after the hole had been carried down to 5,301 feet and then plugged back.

Montebello

Two wells, St. Helens Petroleum Co. No. 28 Monterey and Montebello Wesco No. 1 Montebello, were recompleted in the Montebello field after being redrilled and deepened to the fourth finger of the sixth zone. The former was returned to production flowing 1,746 bbls. of 37.9-gravity oil and 600,000 cu. ft. of gas per day from 6,730 feet. Montebello Wesco's new well, a former upper zone producer, was returned to production flowing 680 bbls. of 36.5-gravity oil per day through a 22/64-inch bean from 6,693 feet. The well



The Texas Co. has started a wildcat in the Anaheim district of Orange County in an area in which the Texas Co. and Shell Oil Co. have undertaken a systematic geophysical survey

has an elevation of 529 feet. Standard Oil Co. and Union Oil Co. are starting an aggressive drilling program in the west end of the Montebello field, and Texas Co. has started its initial well in that area.

McKittrick

The McKittrick field of Kern County, where drilling operations have only been spasmodic during the last 15 years, came back into the limelight in the past week when Standard Oil Co. No. 31, in Section 7-30-22, blew in and caught fire when the bit reached a depth of 2,050 feet. This shallow gas zone had been found in a number of wells and resulted in completion of gas wells from time to time. After burning for several days at the rate of about 10,000,000 cu. ft. per day the flame was blown out with a charge of dynamite and the gas mudded off. Hall-Baker Co. also ran into a gas blowout in the McKittrick field but the flow in this well, No. 1 Williams, in Section 2-30-21, was brought under control. No. 1 Williams blew in unexpectedly flowing 1,500,000 cu. ft. of wet gas per day from a zone at 1,277-1,365 feet and after being brought under control preparations were started to drill ahead.

North Belridge

In the North Belridge field where Temblor and Eocene production has been developed, Belridge Oil Co. completed No. 27-4 in Section 27-27-20, flowing 3,010 bbls. of 34.3-gravity oil and 2,000,000 cu. ft. of gas per day from the Wagonwheel zone of Eocene age through two 1½-inch beans. This new well was bottomed at 8,515 feet. No. 27-4 has been curtailed and will be kept under restraint as a conservation measure. Belridge Oil Co. is running three additional strings of tools and has completed derrick for No. 26-39 which will be drilled in Section 26-27-20, in the immediate future. Richfield Oil Corp., which has completed two excellent flowing wells in the Wagonwheel zone in Section 22-27-20, has spudded in No. 3. Tide Water Associated Oil Co., which recently completed No. 22 in Section 21-27-20, flowing 370 bbls. of relatively clean 32.9-gravity oil and 1,169,000 cu. ft. of gas per day from 8,450 feet, is making good progress in No. 23-3 in Section 22-27-20 with the bit a little below 3,000 feet.

Wilmington

In the Wilmington field of Los Angeles Basin, Union Pacific Railroad Co. completed No. 95, flowing 141 bbls. of 19.7-gravity oil per day from the Ranger zone, with bottom of the hole at 3,070 feet. During the early stages of development operators produced from the upper and lower Terminal zones due to the larger production secured, but in recent weeks a number of wells are being finished in the Ranger zone which has been passed up for the more productive horizons. This has resulted in the completion of new wells that have shown rather small initials which might lead to the assumption that the Long Beach Harbor section of the field has become depleted. Development work at present is going along in a normal way and no attempt has yet been made to proceed with exploitation of tidelands which a recent court decision gave to the city of Long Beach and which later were awarded to Signal Oil & Gas Co. for development. Union Pacific Railroad Co., largest single holder of productive acreage in the Wilmington field, has concluded drilling operations on No. 96 at 3,257 feet after running in 480 feet of 4¾-inch liner including 275 feet of 60-mesh perforated and is at present placing a gravel pack behind the perforations of the liner.

Long Beach

De Soto Oil Co.'s deep test in the Long Beach field is still holding up to about 300 bbls. per day of 27.7-gravity oil from 10,157 feet but no attempt will be made to undertake additional development due to the cost involved and the scarcity of acreage in the immediate area. During the current week Johnston Drilling Co. completed No. 36 pumping 15 bbls. of 23.5-gravity oil cutting 10 per cent from 4,538 feet after finishing the hole with a 7-inch water string landed at 4,437 feet. The small production secured proved to be a distinct surprise as the 101 feet of zone open was expected to be good for about 100 bbls. per day.

Rosecrans

J. L. O'Donnell completed his first well in the Rosecrans field a few days ago when No. 46 Rosecrans was brought in flowing 840 bbls. of 34.5-gravity oil per day from the O'Dea zone with bottom of the hole at 7,725 feet. Hydrocarbon Products, Inc., is swabbing No. 1 Cole following conclusion of drilling operations at 7,750 feet and it should by this time be tanking oil as it has a penetration of 245 feet, top of the zone having been logged at 7,505 feet. Superior Oil Co. failed to find an eighth productive zone in this field in No. 12 Maxwell, bottomed at 8,853 feet. Preparations are now under way to plug back and perforate the 8⅝-inch opposite the O'Dea zone which was drilled through. On an initial test on the way down this well showed a potentiality of 600 bbls. per day. This will conclude Superior's drilling obligations in the Rosecrans field unless subsequent deep drilling proves up the existence of another deeper productive horizon. Union Oil Co. should have two additional wells on production within a few days, Nos. 27 and 29 on the Rosecrans lease. Barnsdall Oil Co. is still working with No. 10 Rosecrans, a deep test, bottomed at 8,747 feet but plugged back to 6,508 feet. This well drilled

An EMSCO Swivel

For Every Drilling Condition

Choose precisely the exact swivel you need to meet your drilling requirements. From the lightest to the heaviest drilling operations, Emsco offers a complete line of thoroughly field-tested swivels to give uninterrupted service under the most severe demands.

Each swivel is "run-in" and tested under load at the factory, and carefully checked for excessive heating, leakage, and smoothness of operation. This extensive testing assures the purchaser of the ultimate in safety, long life and dependability. Continental representatives will gladly furnish detailed information on any Emsco swivel.

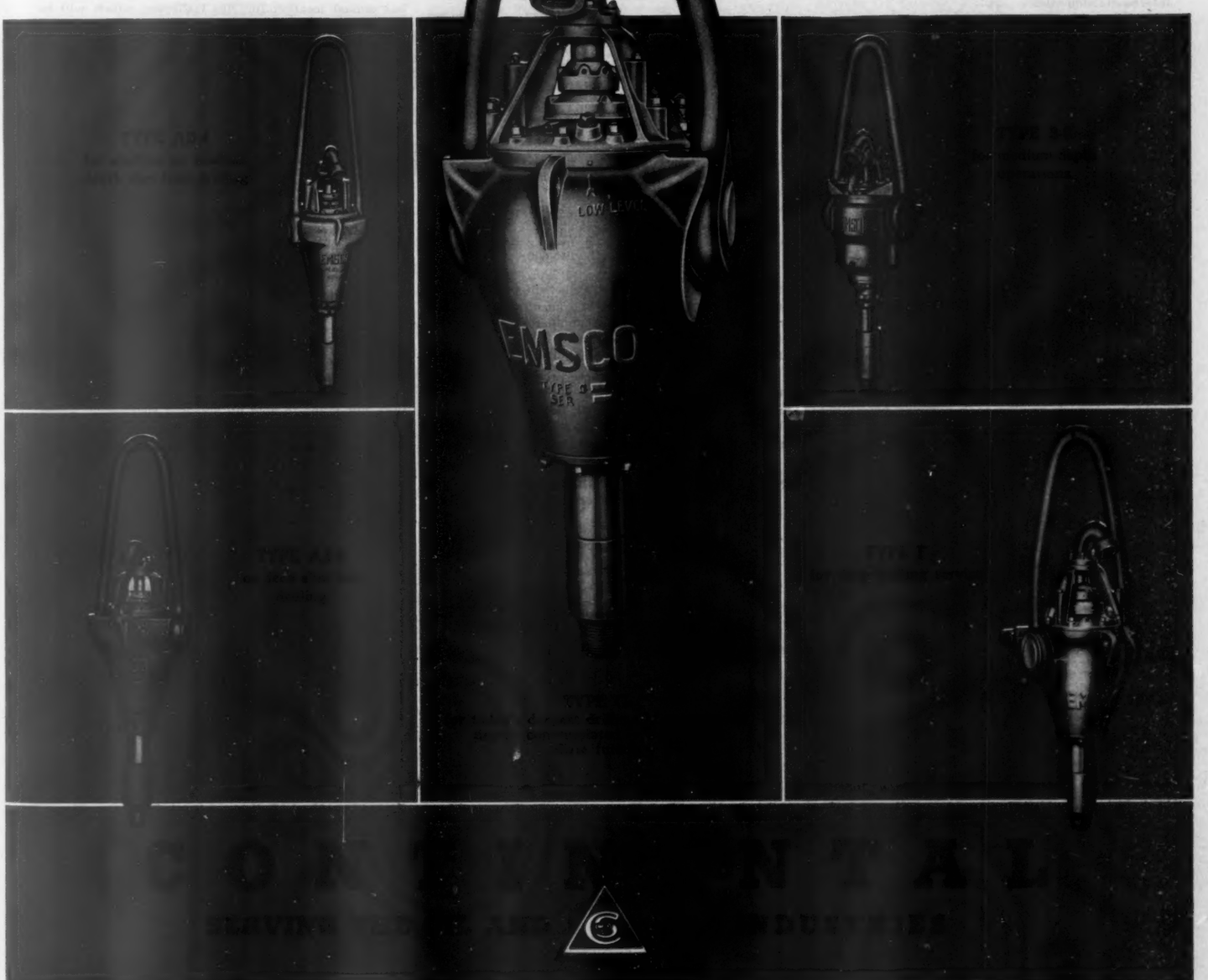
THE CONTINENTAL SUPPLY COMPANY

General Offices: DALLAS, TEXAS

Export Office: CONTINENTAL EMSCO CO., Inc.
30 Rockefeller Plaza New York City, N. Y.

Representatives:

LONDON MARACAIBO BUENOS AIRES
TRINIDAD TAMPICO



TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—	December 24 Total this week	December 24 Daily average	December 17 Total last week	December 17 Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	924,037	129,788
Fuel oil	.....	.....	70,940	10,134	200,201	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	.....	.....	2,879,623	4,040,087
Kerosene	.....	.....	.....	.....	333,626	328,907
Foreign exports—						
Crude oil	171,495	24,499	331,822	47,403	20,814,514	16,039,459
Fuel oil	61,691	8,813	64,379	9,197	8,985,522	13,668,938
Diesel and gas oil	116,036	16,577	156,743	22,392	5,654,431	7,833,825
Gasoline	67,312	9,616	246,532	35,219	7,957,187	7,979,692
Kerosene	28,658	4,094	57,009	8,144	1,168,393	2,003,872
Asphalt	.....	.....	.....	.....	7,563	.....
Lubricants	16,712	2,387	.....	.....	192,272	12,984
Other unfinished oil	.....	.....	.....	.....	.....	1,028,732
Coastwise-domestic—						
Crude oil	224,312	32,045	139,573	19,939	11,213,527	5,899,795
Fuel oil	193,163	27,595	169,104	24,158	12,088,714	15,354,813
Diesel and gas oil	35,168	5,024	46,979	6,711	1,243,537	2,314,452
Gasoline	163,040	23,291	240,279	34,326	14,266,238	16,074,300
Kerosene	3,154	451	2,061	294	252,418	424,255

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	68,671	9,810	.....	.....	320,231	473,728
Gasoline	.....	.....	.....	.....	25,409	151,052
Kerosene	.....	.....	.....	.....	16,124	72,750
Asphalt	.....	.....	.....	.....	490,039	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports—						
Crude oil	271,068	38,724	151,297	21,614	5,307,470	3,462,236
Fuel oil	.....	.....	41,408	5,915	2,405,862	1,918,164
Diesel and gas oil	171,855	24,551	.....	.....	3,224,421	2,929,102
Gasoline	145,181	20,740	.....	.....	5,312,677	5,325,246
Kerosene	.....	.....	.....	.....	696,099	916,817
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	22,705	3,244	.....	.....	556,847	643,834
Other unfinished oil	.....	.....	.....	.....	.....	24,950
Coastwise-domestic—						
Fuel oil	308,982	44,140	184,312	26,330	6,733,806	6,379,356
Diesel and gas oil	12,977	1,854	42,174	6,025	1,554,257	1,527,718
Gasoline	192,414	27,488	143,605	20,515	7,776,830	5,917,297
Kerosene	21,382	3,055	28,422	4,060	693,191	457,242

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	924,037	129,788
Fuel oil	.....	.....	70,940	10,134	200,201	.....
Diesel and gas oil	68,671	9,810	.....	.....	320,231	650,454
Gasoline	.....	.....	.....	.....	2,905,032	4,191,139
Kerosene	.....	.....	.....	.....	349,750	401,657
Asphalt	.....	.....	.....	.....	490,039	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports—						
Crude oil	442,563	63,223	483,119	69,017	26,121,984	19,501,695
Fuel oil	61,691	8,813	105,787	15,112	11,391,384	15,587,102
Diesel and gas oil	287,891	41,127	156,743	22,392	8,878,852	10,762,927
Gasoline	212,493	30,356	246,532	35,219	13,269,864	13,304,938
Kerosene	28,658	4,094	57,009	8,144	1,864,492	2,920,689
Asphalt	.....	.....	.....	.....	63,821	.....
Lubricants	39,417	5,631	.....	.....	749,119	656,818
Other unfinished oil	.....	.....	.....	.....	.....	1,053,682
Coastwise-domestic—						
Crude oil	224,312	32,045	139,573	19,939	11,213,527	5,899,795
Fuel oil	502,145	71,735	353,416	50,488	18,822,520	21,734,169
Diesel and gas oil	48,145	6,878	89,153	12,736	2,797,794	3,842,170
Gasoline	355,454	50,779	383,884	54,841	22,043,068	21,991,597
Kerosene	24,536	3,505	30,483	4,355	945,609	881,497

through the Rosecrans fault and wound up on the wrong side with the result that it failed to find the O'Dea zone productive.

Los Angeles Basin

Southwest Exploration Co. finished a small well in the Huntington Beach tidelands when No. 4 State was brought in pumping 98 bbls. of 26.8-gravity oil cutting 7 per cent from 4,066 feet. This is the fourth small well completed by this company since starting work a month or two ago. Larger wells will be completed when the company spots the bottom of the holes out farther in the structure. as a number of older wells bottomed beneath the tidelands in that region are still pumping around 600 bbls. per day.

In the Dominguez field, where production has been curtailed to approximately the prescribed allowable, Shell Oil Co. recompleted No. 11 Reyes, pumping 451 bbls. of clean 28.9-gravity oil per day after deepening the hole and then plugging back to 4,137 feet. Union Oil Co. and Standard Oil Co. are making preparations to drill offset wells to Tide Water Associated Oil Co. No. 1 Porter discovery well in the Aliso Canyon field of Los Angeles County.

San Joaquin Basin

Two wells were completed in the Mount Poso field of Kern County, one of which, Ring Oil Co. No. 5 Shapiro in Section 32-26-28, was good for 372 bbls. of very clean 16.1-gravity oil daily from 1,712 feet. O. F. W. Oil Co. No. 1 Milburn, in Section 27-26-28, has been completed pumping 25 bbls. of 15.4-gravity oil cutting 30 per cent with bottom of the hole at 1,414 feet. In the Midway-Sunset field, National Oil Co. finished No. 31 Evans in Section 35-32-23, pumping 151 bbls. of relatively clean 15.6-gravity oil daily from 2,040 feet after plugging the hole back from 2,055 feet due to bottom water. Two new wells were completed in the coastal district but neither showed large production. In the Padre Canyon field, Chanclor Canfield Midway Oil Co. finished No. 6-A Hobson flowing 90 bbls. of 20.8-gravity oil cutting 18 per cent daily from 5,426 feet and in the Sespe district of Ventura County, Speik Oil Co. completed No. 2 pumping 116 bbls. of clean 32.1-gravity oil per day from 3,635 feet.

New Wildcats

Several locations have been staked for wildcats to be started early in the new year. Union Oil Co. will start a test in the Seal Beach district of the Los Angeles Basin in an area that has been prospected by several operators in years past. The area has been subjected to a geophysical survey with favorable results. The initial test will be on the Hellman ranch about 1 mile back from tidewater. Superior Oil Co. has staked location for No. 1 Clerico, which will be drilled about 1 mile northwest of the same company's Nos. 1 and 2 on the Crone property in Kern County, Section 36-29-28, which were abandoned as unproductive. Superior No. 1 Clerico will be drilled 989 feet south and 992 feet west of C Section 26-29-26, in the Magunden district of Kern County and an early spud is contemplated. No. 1 Crone logged some favorable showings in the Chanac at 2,892-2,980 feet, but when this zone was found wet the bit was carried down into the Olcese zone and abandoned with bottom of the hole at 5,234 feet. No. 2 Crone tested out the Chanac zone and also found water. No. 1 Clerico is believed to be located higher structurally and should therefore prove an interesting venture. Amerada Petroleum Corp., which has drilled several tests on the Beer property in the Blackwells Corners section of Kern County, has staked location for another wildcat in the same general area. The company is looking for an overlap condition in the Temblor and has located No. 6 Beer 330 feet from the north and 330 feet from the east lines of the NW quarter of Section 21-26-19. Amerada No. 2 Beer was good for about 25 bbls. of clean 25.6-gravity oil initially from 2,670 feet in July, 1937, but failed to hold up and was abandoned. Amerada Petroleum Corp. No. 5 Beer was the deepest test

(Continued on Page 84)

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.
Crude oil prices at the well effective June 22, 1938

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier (La Coyote)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Wheeler Ridge	Kettleman Hills	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.76	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.89
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	..	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	..	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	..	..	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 16.9 degrees, 80 cents; 18-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington. 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents: from 19 degrees upward, prices same as Signal Hill.

Rocky Mountain Area

By
T. R. INGRAM

5,800-Bbl. Well Completed in Garland Pool in Wyoming

DENVER, Colo., Jan. 2.—The holiday season and a blizzard combined to cause most of the wildcats in the Rocky Mountain area to shut down the past week.

Wyoming has a good completion in the Garland field in Big Horn County in the Yale Petroleum Co. No. 2 Allen, which looks good for 250 bbls. per hour from the Madison. No new wells were started.

Montana had two completions in Kevin-Sunburst, one a dry hole and the other a 25-bbl. pumper without acidizing. There were three new operations in that field. The Homestake Oil Co. has sold its properties in Cat Creek to the Continental Oil Co.

Northwest New Mexico had two completions in the Bloomfield area, one a dry hole and the other a 5-bbl. pumper.

NEW MEXICO

Completions of the week in southeastern New Mexico, all in Lea County, included eight oil wells and one failure, as follows:

Martin Yates No. 1 Bowers, SW SE SE Section 31-19s-27e, was bottomed at 1,180 feet, plugged back to 960 feet and pumped 30 bbls. of oil daily with very little water. Top of pay was 852 feet.

Devonian Oil Co. No. 1 State-Ritts, C NW NW Section 21-17s-34e, total depth 4,746 feet, topped pay at 4,740 feet and swabbed 96 bbls. of oil per day through 2-inch tubing set at 4,744 feet.

Ohio Oil Co. No. 3 State-McCallister, C SW SW Section 25-17s-34e, topped pay at 4,660 feet, set 2-inch tubing at 4,640 feet, and flowed 24 bbls. of oil per hour, naturally. Gas gauged 600,000 feet daily; total depth was 4,690 feet.

Phillips Petroleum Co. No. 14 Santa Fe, C SE SE Section 20-17s-35e, was completed at 4,665 feet, total depth, and after acidizing twice flowed 10 bbls. of oil hourly, with 500,000 feet of gas. Top of pay was 4,300 feet.

Same company's No. 17 Santa Fe, C SE SW Section 26-17s-35e, total depth 4,620 feet, topped pay at 4,300 feet and flowed 40 bbls. of oil per hour for eight hours through open 2-inch tubing. Gas in this well also gauged 500,000 feet daily.

Continental Oil Co. No. 8 Reed B-23, C E half SW NE Section 23-20s-36e, was completed for 15 bbls. of oil per hour naturally, with 584,000 feet of gas. Top of pay was found at 3,810 feet, total depth 3,879 feet.

Francis C. Wilson, No. 2 State, C NW NE Section 7-21s-35e, total depth 3,860 feet, was plugged back to 3,785 feet and pumped 152 bbls. of oil in 20 hours initially. Top of pay was 3,785 feet.

Continental Oil Co. No. 2 State C-16, SW SW NW Section 16-20s-37e, flowed 35 bbls. of oil hourly on a four-hour test through open tubing, with 400,000 feet of gas daily. Total depth was 3,835 feet, top of pay 3,813 feet.

Gulf Oil Corp. No. 1 Nick Alley, C NE SE Section 10-23s-37e, was bottomed at 3,713 feet and plugged back to 3,675 feet. The well was dry and abandoned with 2,000 feet of fluid in the hole, mostly water.

Lea County

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Sec. 33-16-36. S.D.O. 4,997 ft.
Repollo Oil Co. No. 1 State, Lease 182, C S½ SE SW Sec. 31-16-37. Drlg. 1,914 ft.
Skelly Oil Co. No. 1-N State, C NW NE Sec. 36-16s-36. Drlg. 4,704 ft.
Amerada Pet. Corp. No. 1-LA State, C SE SW Sec. 1-17-36. Drlg. 3,860 ft.
Continental Oil Co. No. 1-A Sanderson B-14, C N½ NW NW Sec. 14-20-36. W.O.C. 1,443 ft.
Continental Oil Co. No. 1 State H-22, C SW SE Sec. 22-17-34. Drlg. 4,619 ft.
Continental Oil Co. No. 1 State H-34, C SE SE Sec. 34-17-34. C.&P.
Continental Oil Co. No. 1 State 1-7, NE NW NE Sec. 7-17-34. T.D. 4,895 ft.; no show; to plug.
Continental No. 4 State H-35, C SE NW Sec. 35-17-34. Drlg. 1,465 ft.
Drilling & Exploration Co. No. 1-B State, C S½ SE NW Sec. 22-17-35. W.O.C. 1,837 ft.
Geo. F. Getty, Inc., No. 4-F State, C NE NW Sec. 36-17-34. Drlg. 4,224 ft.
Humble O. & R. Co. No. 2-J State, C NW SW Sec. 19-17-35. W.O.C. 1,700 ft.
Humble O. & R. Co. No. 1-K State, C SE SE Sec. 28-17-35. C.&P.
Magnolia Pet. Co. No. 3-M State, C SW NW Sec. 34-17-35. Drlg. 4,150 ft.
Magnolia Pet. Co. No. 20 State-Bridges, C SW NW Sec. 24-17-34. T.D. 4,690 ft.; tstg.
Magnolia Pet. Co. No. 21 State-Bridges, C NE NE Sec. 23-17-34. Drlg. 4,380 ft.
Magnolia Pet. Co. No. 22 State-Bridges, C SE SW Sec. 24-17-34. Drlg. 3,080 ft.
Maljamar O. & G. Co. No. 1-B Baish, C NE NW Sec. 22-17-32. T.D. 4,157 ft.; P.B. 3,527 ft. and S.D.
Maljamar O. & G. Co. No. 1-B Mitchell, C NE SE Sec. 20-17-32. Drlg. 3,250 ft.
Maljamar O. & G. Co. No. 6 Mitchell, C SW NE Sec. 20-17-32. T.D. 3,600 ft.; W.O.S.T.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. T.D. 4,125 ft.; P.B. 4,115 ft.; tstg.
Phillips Pet. Co. No. 3 Hale, C SE SE Sec. 35-17-34. T.D. 4,552 ft.; to test.
Phillips Pet. Co. No. 1 Mabel, C SW NW Sec. 35-17-34. T.D. 4,716 ft.; swb. 60 B.O. in 12 hrs.
Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. T.D. 4,629 ft.; to D.D.
Phillips Pet. Co. No. 13 Santa Fe, C NW NW Sec. 28-17-35. T.D. 4,630 ft.; swb. and F. 7 B.O.P.H.
Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. T.D. 4,700 ft.; swb. 12 B.O.P.H.
Phillips Pet. Co. No. 18 Santa Fe, C NW NE Sec. 34-17-35. Drlg. 1,083 ft.
Phillips Pet. Co. No. 19 Santa Fe, C NW NE Sec. 35-17-35. T.D. 4,780 ft.; P.B. 4,722 ft.; swb. 30 B.W.P.H.
Phillips Pet. Co. No. 20 Santa Fe, C SW SW Sec. 27-17-35. C.&P.
Phillips Pet. Co. No. 21 Santa Fe, C NE NE Sec. 33-17-35. Loc.
Phillips Pet. Co. No. 22 Santa Fe, C NW SW Sec. 26-17-35. Drlg. 1,300 ft.
Shell Pet. Corp. No. 1-C State, C NE SE Sec. 24-17-34. W.O.C. 1,701 ft.
Shell Pet. Corp. No. 1-I State, C SW NW Sec. 29-17-35 T.D. 4,753 ft.; S.D.O.
Shell Pet. Corp. No. 1-S State, C NE SE Sec. 21-17-35. T.D. 4,745 ft.; bailed 6 B.O.P.H.; to P.O.P.
Shell Pet. Corp. No. 1-V State, C NE SE Sec. 21-17-35. Rng. tbg. 4,680 ft.
Shell Pet. Corp. No. 2-V State, C SE SE Sec. 27-17-35. Drlg. 1,645 ft.
Standard Oil Co. of Texas No. 1 State, Lse. 6, C NW SW Sec. 34-17s-35. Drlg. 4,076 ft.
Standard Oil Co. of Texas No. 2 State, Lse. 3, C NW NW Sec. 32-17-35. Drlg. 3,930 ft.
Standard Oil Co. of Texas No. 3 State, Lse. 4, C NW SE Sec. 27-17-35. Drlg. 4,480 ft.
Stanolind O. & G. Co. No. 1 State, C SW SE Sec. 1-17-36. Drlg. 4,328 ft.
Texas Co. No. 1-T State, C SE NE Sec. 25-17-34. T.D. 4,725 ft.; on gas lift; no ga.
Twin Oil Corp. No. 1-D State, C SW NE Sec. 30-17-35. Drlg. 4,485 ft.
Westmount Oil Co. No. 1 State, C SE NW Sec. 30-17-35. T.D. 4,728 ft.; tstg.
Fullerton Oil Co. No. 1-A Walker, C SW NW Sec. 18 18-32. Loc.
Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. Cg. 4,706 ft.
Texas Co. No. 3-R State, C SE NE Sec. 6-18-35. T.D. 4,675 ft.; tstg.
Shell Pet. Corp. No. 2 Foster, SE SW SE Sec. 34-19-36. R.U.R.
Amerada Pet. Co. No. 7 Andrews, C E½ NE NE Sec. 23-20-36. Drlg. 3,695 ft.
Continental Oil Co. No. 2 Meyer B-31, C NE SW Sec. 31-20-38. T. D. 3,872 ft.; F. 20 B.O.P.H.; S.I.
J. M. Rush No. 3 State A-20, NW SW SE Sec. 20-20-37 Drlg. 3,037 ft.
J. M. Rush No. 4 State A-20, NW SE SE Sec. 20-20-37. Loc.
Texas Co. No. 16 Lieu-Lands, C NE SW Sec. 20-20-37. Drlg.
Aloco Oil Co. No. 1 Carson, C SW SE Sec. 28-21-37. Drlg. by lost bit 3,560 ft.
Cities Service No. 1-M State, C SW SW Sec. 36-21-36. Drlg.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec 6-21-37. T.D. 3,819 ft.; F. 30 B.O.P.D.
Continental Oil Co. No. 3 Lockhart B-1, C NW SE Sec. 1-22-36. T.D. 3,685 ft.
Continental Oil Co. No. 6 Lockhart A-18, C W½ NW SW Sec. 18-21-36. W.O.C. 3,780 ft.
Magnolia Pet. Co. No. 1 Carson, C SE NE Sec. 31-21-37. T.D. 3,770 ft.; F. 74 B.O. in 22 hrs.
J. M. Rush No. 1 Weatherly, C SW NW Sec. 21-21-37. Drlg. plug 3,497 ft.
Twin Oil Co. No. 2 State, C SW NW Sec. 32-21-37. Drlg. 3,785 ft.
Francis C. Wilson No. 3 State, NW SE NE Sec. 7-21-35. Drlg. 1,265 ft.
J. C. Clower No. 1-B Manda, NE NE NW Sec. 28-22-37. Drlg. 3,661 ft.
Danglade & Clower No. 1-B Glier, C SE NW Sec. 33-22-37. R.U. spdr.
Continental Oil Co. No. 4 State J-2, C NE NE Sec. 2-22-36. Drlg. 870 ft.
Devonian Oil Co. No. 2 Christmas, SE SW SE Sec. 28-22-37. Loc.
Ohio Oil Co. No. 1 Saunders, C NE NW Sec. 1-22-36. Drlg. 3,225 ft.
Olean Pet. Co. No. 2 Brunson, SW NE SE Sec. 4-22-37. W.O.C. 3,605 ft.
Olean Pet. Co. No. 2 Farrell, SW SE SE Sec. 22-22-37. Drlg. 2,430 ft.
Twin Oil Co. No. 1-C State, C SE NE Sec. 17-22-37. Drlg. 2,960 ft.
Two States Oil Co. No. 3-B Cole, C NE NW Sec. 16-22-37. Drlg.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; F. 12 B.O.P.D.
Great Western Prod. No. 2-B Leonard, C NW NW Sec. 32-23-37. Loc.
R. Olson No. 1 Blinebry, C SW SW Sec. 29-23-37. Loc.
Texas Pacific Coal & Oil Co. No. 7-A State, NW NW NW Sec. 32-23-36. T.D. 3,748 ft.; P.B. 3,735 ft.; est. 25 B.O.P.D. and 6,000,000 cu. ft. gas.
Montecito Oil Corp. No. 1 Woolworth, NE SE SW Sec. 33-24-37. Drlg. 2,840 ft.
Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. T.D. 3,201 ft.
Phillips and Pure No. 4 Woolworth, C NW SE Sec. 33-24-37. Drlg.
Repollo Oil Co. No. 1 State, 157-C, SW SW SE Sec. 32-24-37. R.U.S.T. 3,430 ft.
Schermerhorn Oil Co. No. 4 Woolworth, C NE SE Sec. 28-24-37. R.U. mach.
Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. Drlg. 3,473 ft.; (last report).
Weier Drlg. Co. No. 2 Woolworth, NE SE SW Sec. 28-24-37. T.D. 3,500 ft.; 2,500 ft. O.I.H.
Sam Weiner No. 2 Woolworth, SW NW SW Sec. 33-24-37. R.U.R.
Anderson & Prichard No. 4 Carlson-Harrison, NE SE NE Sec. 27-25-37. T.D. 3,349 ft.; swb. 10 B.O.P.D.
Anderson & Prichard No. 4 Wells, C NW NW Sec. 5-25-37. T.D. 3,550 ft.; S.I.
Culbertson & Erwin No. 2 Henry, SW SE SW Sec. 28-25-37. S.D. 1,575 ft.; reprs.
Geo. F. Getty No. 1-G State, NW NW NW Sec. 2-25-37. Drlg. 3,185 ft.
Gulf Oil Corp. No. 5 Stuart, C NE NE Sec. 10-25-37. Drlg. 2,997 ft.
Italo Pet. Corp. No. 1 Carlson A-23, NW NW SW Sec. 23-25-37. Drlg. 2,685 ft.
Italo Pet. Corp. No. 1 Carlson B-27, NE NW NE Sec. 27-25-37. T.D. 3,364 ft.; P.B. 3,354 ft.; C.O.
Italo Pet. Corp. No. 1 Indian Pet. Corp., NE NE NE Sec. 6-25-37. Drlg. 2,779 ft.
Richmond Drlg. Co. No. 1-A State, C NW SW Sec. 2-25-37. Drlg. plug 3,319 ft.
Sam Weiner No. 3 Smith, C N½ NE SE Sec. 4-25-37. Drlg. 2,940 ft.

Eddy County

Carper Drlg. Co. No. 3 Robinson, SW SW SE Sec. 25-16-31. Drlg. 4,003 ft.; swb. est. 50 B.O.P.D.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. T.D. 3,950 ft.; S.D.O.
Fullerton Oil Co. No. 4-A Johnson, C SW NW Sec. 35-16-31. Drlg. 3,162 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. T.D. 3,530 ft.; swb. and F. 35 B.O. in 12 hrs.
Hammond & Sons No. 1 Ployhar-State, SW SW SE Sec. 16-17-28. Drlg. 250 ft.
J. O. and J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.
English & Harmon No. 1 Stogner, C NW SE Sec. 31-17-31. Drlg. 3,065 ft.
P. B. English No. 1 Saunders, SE SE SE Sec. 13-17-27. T.D. 360 ft.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. T.D. 3,146 ft.; 1,500 ft. O.I.H.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. Drlg. 2,310 ft.
F. G. Keyes No. 3 Red Gulch, NW NW NE Sec. 16-17-28. Drlg. 575 ft.
Ohio Oil Co. No. 4 State-McCallister, Sec. 25-17-34. W. O.C. 510 ft.
C. S. Powell No. 1 Smith, NW NW NE Sec. 6-17-29. T.D. 650 ft.; S.D.O.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5 18-27. T.D. 1,250 ft.; tstg.
Farmer & Talimadge No. 1 Hubbell, NE SW Sec. 4-18-25. S.D.O. 380 ft.
Green Bay Oil Co. No. 1-A Johnson, C SE SE Sec. 11-18-31. M.I. mch.
Paton Bros. No. 1 Erwin, C SE SE Sec. 5-18-31. T.D. 2,870 ft.
Rhodes Drlg. Co. No. 1 Swearingan, NE SE NW Sec. 14-18-31. T.D. 3,475 ft.; 500 ft. O.I.H.
Worth Drlg. Co. No. 1 Taylor, C SW SW Sec. 12-18-31. T.D. 3,600 ft.; F. 42 B.O.P.D.
Yates et al No. 1 Yates, C NW SW Sec. 6-18-30. T.D. 2,810 ft.; swb. 70 B.O. in 6 hrs.
Harvey E. Yates No. 1 Travis, NE SE SE Sec. 6-18-29. Spud.
Geo. E. Robb No. 1 Cannon, C SW SE Sec. 4-19-30. Drlg. 200 ft.; last report.
Geo. E. Robb No. 1 Vandagriff, SW NE Sec. 6-19-31. Drlg. 800 ft.; last report.
Martin Yates, Jr., No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.; tstg.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. Drlg. 335 ft.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28. T.D. 2,922 ft.; S.D.
Barnett Oil Dev. Co. No. 1 King, C NW SE Sec. 23-26-30. T.D. 1,100 ft.; C.O.

(Continued on Page 82)

THE PO

to see t

Unquestionably, the most widely and rapidly adopted power in the oil industry throughout the world today is "Caterpillar" Diesel. These modern, sturdy, precision-manufactured engines have:

STAMINA to see the job through;

DEPENDABILITY that reduces time-out to the minimum;

SIMPLICITY that requires no specially trained attendant, no frequent or delicate adjustments; involves no water supply problem;

RESPONSIVENESS to drive right through when the load is applied;

ECONOMY through low fuel cost that leaves other types of power far behind;

PORTABILITY that incurs no heavy moving expense;

LONG LIFE and LOW UP-KEEP under ordinary care that make depreciation slow and spread investment write-offs thinly;

VERSATILITY that fits them ideally to any type of drilling rig or pumping unit in the oil industry;

SERVICE FACILITIES unsurpassed for efficiency and convenience.

CATERPILLAR TRACTOR CO., PEORIA, ILL.

Leading manufacturers of oil-field and pipe-line equipment power their products with "Caterpillar" Diesel Engines.

9 SIZES—32 TO 160 HORSEPOWER

KANSAS

PENNSYLVANIA

OWER

e the job through

ILLINOIS *(above)*

Two D17000 "Caterpillar" Diesel Engines powering Bridgeport rig and Gardner-Denver 7¼ x 14 mud pump. Working on a 24-hour-per-day schedule. Owner, T. T. Eason, Enid, Oklahoma.

KANSAS

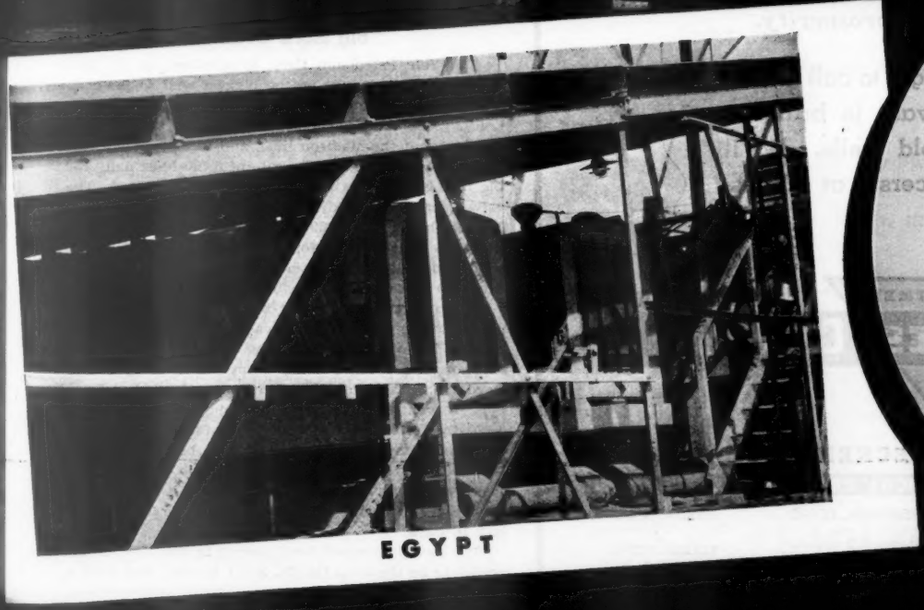
A D13000 "Caterpillar" Diesel Engine driving OC5 countershaft with flat belt to cable tool rig. Runs on a 24-hour-per-day schedule. Owner, Rosenthal & Beardmore Drilling Co., Wichita, Kansas.

PENNSYLVANIA

A D4600 "Caterpillar" Diesel Engine driving Model D Franklin countershaft with an 18-inch pulley on cable tool operation. Drilling 165 feet per 24 hours at 2000-ft. altitude.

EGYPT

Two D17000 "Caterpillar" Diesel Engines powering a rotary rig with dual mud pumps at Dishet-El-Debá, Egypt. Owner, Socony Vacuum Oil Co.



EGYPT

CATERPILLAR DIESEL ENGINES

REG. U.S. PAT. OFF.

Chaves County

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 770 ft.; S.D. for csg.
E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,281 ft.; S.D.O.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27-7s-35e. T.D. 5,151 ft.; P.B. 4,290 ft.; tstd. 16 B.W.P.H.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Drlg. below 800 ft.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. S.D. 4,450 ft.

McKinley County

Pet. Products Corp. No. 5 Santa Fe, SW NE NW Sec. 1-17-9w. Cmtd. 6⅝-in. 1,604 ft.; W.O.C.
S. Dysart No. 3-A Govt., NE NW NE Sec. 14-14n-10w. Cmtd. 12½-in. 1,320 ft.; 100 ft. sat.
Pet. Products Co. No. 3 Santa Fe, NE NW Sec. 1-17n-9w. Drlg. 50 ft.

Rio Arriba County

Oil City Pet. Co. No. 2 Wirt-Sanchez, C Sec. 12-31-2e. M.I.

San Juan County

Goodrun & Vincent No. 2 Hare, SE SW NE Section 23-29n-11w, Bloomfield district, was plugged and abandoned at 1,773 feet, total depth. It plugged back and tested a show at 704 feet without results.

Goodrun & Vincent No. 3 Hare, SW NE Section 23-29n-11w, is pumping 5 bbls. per day at 735 feet, total depth.

Continental Oil Co. No. 85-A Rattlesnake, CEL SW NE Sec. 2-29n-19w. R.U.
San Juan O. & G. Co. No. 2 Cassidy, NW NW SW Sec. 18-29n-11w. Drlg. 350 ft.
Kutz Deep Test, Inc., No. 1 Govt., C NW NW Sec. 28-28n-10w. Drlg. 235 ft., C.D.
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. 625 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. Drlg. bl. sh. 830 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,885 ft.; W.O. csg.; S.O. in Farmington sd. but will D.D. to Picture Cliff.
Goodrun & Vincent No. 1 Seitzinger, NE NW SE Sec. 23-29n-11w. Drlg. 680 ft.
Ted Whetstine No. 1 McGee, NW NW Sec. 20-30n-11w. S.D. 434 ft. for mat.
Bullock & Noland No. 1 Bunce, SW SE Sec. 24-29n-1w. Drlg. 1,023 ft.
San Juan O. & G. Co. No. 1 Cassidy, C SE SE Sec. 19-29n-11w. Drlg. 828 ft.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; prep. to run 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec 32-36-1w. S.D. 1,840 ft.
Axelind Oil Co. No. 1, Sec. 11-32n-2e. Drlg. below 700 ft.

Boulder County

Reynolds & Roher No. 1 Thomas, SW SW Sec. 17-1n-70w. Drlg. 250 ft.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. S.D. 7,565 ft. for holidays.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. S.D. 2,460 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson, C NE Sec. 36-7s-88w. S.D. 2,008 ft. for winter after W.S.O. with 5⅛-in. at 1,757 ft.

Huerfano County

J. W. Tomkins & Sons No. 2 Presser, SE SE SE Sec. 3-29s-69w. Drlg. 140 ft. in 12½-in. hole.

La Plata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 2,250 ft.; U.R. 8¼-in. from 1,860 ft. to S.O.G. at 2,140 ft.

Las Animas County

Hulme-Johnston-Allison No. 1 Azar, SE SE NW Sec. 27-34s-58w. Drlg. 1,240 ft. in 12½-in. hole.

Logan County

West Plains Dev. Co. No. 1 Sheldon, SE NW SE Sec. 3-10s-55w. Spdg. delayed by weather.

Moffat County

Stanolind O. & G. Co. No. 35-SD Parkinson, SE SE NE Sec. 22-4n-92w. T.D. 3,483 ft.; cmtd. lnr.; perf. at 3,480 ft.; tstg.
Isenberg-Parker-Myers No. 1 Myers-State, NW SE NE Sec. 36-4n-103w. Drlg. 787 ft. dark sh.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,080 ft.; U.R. 8¼-in.
MacKinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. S.D. 3,050 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. Drlg. 4,917 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,619 ft.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,434 ft.; conditioning hole.

Pueblo County

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 870 ft. for csg.
Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. S.D. 1,975 ft.; through second Dakota; W.S.O.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. S.D. 3,613 ft. for holidays.

Routt County

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. S.D. 1,790 ft.

WYOMING

Big Horn County

The Yale Petroleum Corp. is winding up the year with what promises to be the biggest well so far completed in the Garland field in its No. 2 Allen, NE NE SE Lot 52 (Section 33) 56n-97w. It was drilled to 4,025 feet, in the top of the Madison lime, and kicked off without swabbing. It flowed at the rate of 5,700 bbls. daily for the first eight hours when all tankage was filled. The valve then was closed to a 10/64-inch choke and then it made better than 300 bbls. per day. Estimates are that it is at least good for 250 bbls. an hour. The top of the lime was found considerably higher than expected. It is 330 feet north of No. 1 Stock-Jones completed a year ago in the Madison at 4,101 feet for 2,880 bbls. per day. The next best well was the Ohio Oil Co. No. 1 Easton, Tract 2, Section 33, the discovery well in the Madison and which possibly went into the top of the Devonian. It was completed in 1930 and rated at 5,600 bbls. It went to 4,424 feet and encountered porosity at 3,770 feet, 275 feet below the top of the Madison. It produced intermittently 809,875 bbls. between December, 1931, and August, 1935, by the Ohio company and then by the unit to January, 1936, when it was shut in for lack of a market. It flowed 8,860 bbls. during the last 16 days.

The next important development in this field is expected to be the Joan Oil Co. No. 1 Howell, less than a mile to the west, which is several hundred feet lower on structure. It is installing a rotary to drill deeper from its present depth of 2,718 feet.

The bringing in of the Yale well attracts attention to a recent report of investigations of chemical and

A NEW YEAR'S

"Thank You"

To Our Thousands of Friends . . .

● We are fortunate in having thousands of friends in the oil industry—fellows who have called upon us to serve them throughout more than six years of operations. In appreciation of this confidence and friendly cooperation, we take this opportunity to express gratitude and to wish everyone a New Year of happiness and *prosperity*.

As a reminder . . . don't forget to call Chemical Process when you want to bring in new wells or to revive old wells. We'll give you profitable producers if at all possible!

CHEMICAL TREATMENT
THE CHEMICAL PROCESS COMPANY
OF OIL AND GAS WELLS

MAIN OFFICES; PHONE 206 BRECKENRIDGE, TEXAS

PHONE, WIRE OR WRITE YOUR NEAREST CHEMICAL PROCESS SERVICE STATION

HUGOTON, KANSAS
Tel 211—C J Thompson

RUSSELL, KANSAS
Tel 493—C R Vincent

WICHITA, KANSAS
Tel 2-2478—C V Burkett

SHREVEPORT, LA.
Tel 2-3665—F F Carr

HOBBS, N. M.
Tel 444—P W Morrison

SEMINOLE, OKLA.
Tel 844—T S Lancaster

TULSA, OKLA.
Tel 3-0807—M E Chapman

BRECKENRIDGE, TEXAS
Tel. 206 and 306—C K West, P W Pitzer, G R Whitney, A J Buchanan
Tel. 649—A C Hanna
Tel. 745—B M Kingston

AMARILLO, TEXAS
Tel 2-3712—C J Thompson

ANSON, TEXAS
Tel 41—J. T. Vernon

LULING, TEXAS
Tel 390—O. K. Wills

ODESSA, TEXAS
Tel. 21—C F Hogan

WICHITA FALLS, TEXAS
Tel 2-4307—W E (Bill) Norton

refining of some Wyoming black oils issued by the U. S. Bureau of Mines. The report represents work done under a cooperative agreement between the Bureau of Mines and the University of Wyoming at the experimental plant at Laramie. The progress report is by H. M. Thorne and Walter Murphy. The estimated potential of Wyoming black oils is around 56,000 bbls. daily, of which only about 13,000 bbls. daily were produced last year. The report states that the black oils cannot command a more favorable position in the markets in the Rocky Mountain region until their characteristics are understood more fully and suitable and efficient refining methods are developed. The authors state that the problem of sulfur reduction in the distillates deserves the major emphasis for future study. Operators in the black oil districts are anxious that the studies being made at the Laramie station be continued and they are hopeful that the Wyoming delegation in Congress will make every effort to see that the station has ample funds appropriated to continue the work.

Libby-Keoughan Interests No. 1 Sheets-Govt., SE NE SE Sec. 9-55n-96w. T.D. 1,960 ft.; fsg. bir.
A. L. Rankin No. 1 Karjalla-Rankin, C SW NW Sec. 10-54n-94w. T.D. 590 ft.; drlg. plug to D.D.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. Cmtd. 8¼-in. at 1,027 ft.; W.O.C.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,718 ft.; will install rot. to go to Madison.
John H. Thomas No. 1 Govt., SW SW SE Sec. 3-54n-94w. Drlg. 920 ft.

Campbell County

Fyre & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. Landed 5⅛-in. on bttm. at 823 ft. and S.D.

Carbon County

Ohio Oil Co.-California Co. No. 7 Union Pacific-Johnson, CEL NE SW Sec. 23-21n-79w. Drlg. 1,992 ft.; 11¾-in. 311 ft.
Sinclair-Wyo. Oil Co. No. 4 Mahoney, CNL NE SW Sec. 34-28n-88w. T.D. 4,315 ft.; top Tensleep 4,356 ft.; swb. 127 bbls. first 23 hrs. while C.O.
Producers Oil Co. No. 1 Lake Valley, 200 ft. CNL Sec. 14-20n-88w. S.D. 1,916 ft.

Converse County

Wyore Oil Co. No. 3 Gaspar, SW Sec. 25-32n-69w. Loc.
Chas. Wheeler et al No. 1 Fitzhugh, NW Sec. 19-31n-71w. Drlg. r.b. 460 ft.
H. O. Emery et al No. 2 Roberts, C SW SE Sec. 2-31n-70w. Drlg. 254 ft.; S.G.
Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 640 ft. for csg.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. T.D. 2,390 ft.; rng. 10-in. from 1,760 ft. to bttm.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. T.D. 483 ft.; prep. to run csg.
New Era Fuel Co. No. 2 Mary Gaspar, CNL NW SW Sec. 25-32n-69w. S.D. 670 ft. without tstg.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. Drlg. 2,665 ft.
Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. Drlg. 150 ft.
Dr. Harvey No. 1 Granville-Tinnin, NE NE SE Sec. 6-31n-69w. Drlg. 270 ft.

Fremont County

Lincoln O. & G. Co. No. 3 Tribal, SW SW SE Sec. 23-1s-1e. Drlg. 390 ft.
Frank Pouppirt No. 1 Fidelity Tr., SW NE SW Sec. 27-3n-1w. S.D. 1,168 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. Drlg. 3,465 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. Drlg. 1,240 ft.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. S.D. 1,200 ft.; S.O. 1,095 ft.
Frank Poupirt No 2, NW NW SW Sec. 27-3n-1w. Drlg. 275 ft. gr. sh.

Lincoln County

Miller Robert Taylor was the successful bidder for an oil and gas lease on fractional Section 36-25½-115w, at the state land board's public auction at Cheyenne December 20. This tract of 70.5 acres is the lease on which the well is located and was the only acreage on the Wyoming structure not in the unitized area for which Taylor is the operator for the permittees. Drilling is scheduled to resume next August.

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 1,096 ft.
Mazel Skofield No. 1, CWL NE NE Sec. 32-19n-116w. Drlg. 421 ft. (Cumberland dist.)

Natrona County

General Pet. Corp. No. 2 State, NW SE NE Sec. 16-35n-77w. Drk.; foundations run.
General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. Cg. 7,112 ft.; 8⅝-in. 7,074 ft.

Niobrara County

Ohio Oil Co. No. 5 Rohlff, 100 ft. E of C E½ Sec. 32-36n-65w. Loc.
Continental Oil Co. No. 14 Tom Bell, C NW SW Sec. 34-36n-65w. B.R.
Continental Oil Co. No. 3 Apex-4, SE SW NW Sec. 35-36n-65w. Drlg. 2,327 ft.
Argo Oil Co. No. 9 Elliott, NW SE SE Sec. 5-35n-65w. Drlg. 3,108 ft.
Ohio Oil Co. No. 6 Leo O.P.C.-16, NW NE SW Sec. 35-36n-65w. Drlg. 2,445 ft.; 11¾-in. cmtd. 535 ft.
Continental Oil Co. Acct. Buck Creek Oil Co. No. 7-B Schuricht, NE SW SE Sec. 6-35n-65w. Drlg. 3,910 ft.; top basal Sundance 3,903 ft.; 7-in. cmtd. 3,905 ft.
F. F. Hintze et al No. 1 Wright-Govt., NW NW SE Sec. 30-36n-63w. Drlg. 2,715 ft.
Ohio Oil Co. No. 1 Jones, SE NE SE Sec. 30-35n-62w. Drlg. 2,873 ft. in Deadwood.
J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Loc.
Cow Gulch Oil Co. No. 1 MaGoon, NE NE Sec. 33-35n-64w. Drlg. 1,695 ft.; Converse zone 1,388-95 ft.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 1,000 ft.
H. D. Moore et al No. 1 Bergrem, NW Sec. 23-35n-63w. Drlg. 1,900 ft.
Adams O. & G. Co. No. 1 Baker, NW NE SW Sec. 8-35n-65w. T.D. 5,406 ft.; fsg. D.P.

Park County

E. J. Preston No. 1, SW SW Sec. 26-58n-98w. M.I.M.
Blue Ridge Co. No. 1 Mau, NE NE SW Sec. 25-58n-98w. Cmtd. 12½-in. 100 ft.; drlg. plug.
Stanolind O. & G. Co. No. 18 Elk-5, NW NE NW Sec. 30-58n-99w. S.D. 3,002 ft. for W.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. T.D. 8,690 ft., C.D.; 6⅝-in. 8,330 ft.; drlg. plug.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. S.D. 550 ft.

Sublette County

Texas C.-Frontier Pet. Co. No. 1 Unit, SE SE SW Sec. 1-28-11w. T.D. 6,247 ft.; prep. to run csg.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H.L. Budd rnh., SE SE Sec. 31-13n-112w. S.D. 10 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.
Wyoming Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. T.D. 1,792 ft.; trying to kill gas.

Sweetwater County

Sinclair-Wyo. Oil Co. No. 81, SW NW NW Sec. 11-26n-90w. Drlg. 1,849 ft.

Uinta County

Stove Creek Oil Co. No. 3 Govt., CWL SW NW Sec. 26-14n-119w. Drlg. 50 ft.
Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. Drlg. 1,700 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 350 ft.

Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. Drlg. 2,030 ft.
Frison Oil Co. No. 2 Govt., SE SW NE Sec. 24-47n-90w. S.D. 145 ft.

Weston County

Conway Oil Corp. No. 3 Govt., C NW SW Sec. 31-42n-60w. Drlg. 180 ft.
Krokar et al No. 1 SE SE NW Sec. 31-47n-63w. Drlg. 200 ft.
James Farrel No. 1 Govt., NE SE SE Sec. 2-44n-61w. Drlg. 74 ft.
Selby & Langford No. 1, CNL NW SE Sec. 6-46n-63w. Drlg. 100 ft.
Whedon et al No. 1, Sec. 21-46n-64w. Drlg. below 300 ft.
F. R. Dilger, Tr., No. 16, SW SW NE Sec. 30-46n-63w. T.D. 1,402 ft.; recmtd. csg.
John Borophy No. 1 George, SW SE NW Sec. 26-48n 64w. Drlg. 2,240 ft.

MONTANA

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Blaine County

G. R. Teeters No. 1 Stam, CSL SW SE Sec. 20-31n-18e. (Formerly R. E. O'Keefe). S.D. 860 ft. for csg.; top Eagle 630 ft.

Carbon County

Valentine M. Kirk et al No. 1 Robinson, SW SW NW Sec. 2-7s-21e. Drlg. 1,500 ft.
Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. T.D. 1,580 ft.; landed 6¼-in. on bttm.
R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. T.D. 2,880 ft.; rng. 7-in.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
Sha-Wha Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res; will U.R. to bttm. and set csg.

Cascade County

E. B. M. Oil Co. No. 1 Betts, CSL NW SE Sec. 34-18n-4e. T.D. 1,250 ft.; prep. to res.

Choteau County

Security Pet. Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. S.D. 1,991 ft.; S.D. for 6⅝-in.; Sunburst 1,935-53 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,065 ft.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. Drlg. 1,928 ft.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 25-6n-60e. Drlg. 320 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,080 ft. (C.D.); in lower Quadrant.
Emmons et al No. 5 Stocker, SW NW SW Sec. 24-22n-18e. Drlg. 950 ft.

Glacier County

Cut Bank had no completions and no new operations. The Nadeau Brothers No. 1 Government, southeast of the Yukon Oil Co.'s recent discovery in the Moulton sand, topped the Colorado at 498 feet, which puts that horizon 67 feet higher than in No. 1 Lungren. The operators are making a race to complete this well, which is on a government permit, before the end of the year and information as to present depth is withheld.

Nadeau Bros. No. 1 Govt., NW SW NW Sec. 25-37n-5w. Colo. 498 ft.; 10¾-in. 513 ft.; drlg. depth not reported.
Glacier Prod. Co. No. 3 Neill, SE SE NE Sec. 20-33n-5w. Drlg. 1,095 ft.; Colo. 610 ft.; 10¾-in. 631 ft.
Glacier Prod. Co. No. 1 Gillard Unit, 100 ft. from N line and 1,320 ft. from W line, Sec. 29-34n-6w. Drlg. 1,860 ft.
Glacier Prod. Co. No. 4 State, 2,200 ft. from N line and 1,320 ft. from W line, Sec. 16-33n-5w. Drlg. 1,805 ft.
K. D. Pardee No. 3 Tribal-179, NW NE SE Sec. 12-32n-6w. Drlg. 2,135 ft.

CRACKED AND WORN

CYLINDER HEADS

(DIESEL AND OTHER TYPES)

W-E-L-D-E-D

EQUAL TO NEW

Because of our specialized equipment and experience, broken and worn parts are sent to us for reconditioning from all over U. S. and Canada. Send us a broken part as a test; we'll return it GUARANTEED EQUAL TO NEW, *at big savings over new part cost.*

RALPH STARK, INC.

43-12 33rd Street, Long Island City, N. Y.

MAKE BIG SAVINGS on THESE POWER PLANT REPAIRS

Thread, gasket, ground-face and press-fit joint leaks and blowouts
Handhole, manhole, tube-cap, tube-end, stay-bolt and header leaks
Cracked tube sheets, boiler sections, cylinders, economizers, preheaters, stills, pump and heater shells and water jackets
Metal punctured or weakened by force or corrosion
Pump Valve and steam chest leaks
Tank and radiator leaks
Breeching and smokestack leaks
Scored cylinders
Loose screws, bolts and nuts
Loose anchorages and bases
Loose tool handles.

MAKING these repairs with Smooth-On is like finding money. The Smooth-On itself costs almost nothing, and the Smooth-On method restores initial efficiency at lowest expense for labor and with least operating interruption. Permanent or temporary repairs are easily made. Further, the Smooth-On method takes least physical effort and avoids much overtime work for the engineer.

Stopping leaks

Tightening loose parts

Smooth-On No. 1 is a quick hardening cement that is used for repairing breaks in castings, making loose parts tight, making tight joints and seams and stopping leaks in pipe lines, pressure containers, etc. May be used on any metal. Withstands fire, water, steam or oil.

Smooth-On No. 3 is an elastic slow hardening cement for making screw-threaded joints, flange joints, coating gaskets, sealing rivets, seams, etc. Withstands high temperatures and pressures, and will not blow out.

For complete instructions get the free Smooth-On Handbook.

Buy Smooth-On No. 1 in 1 or 5-lb. can or 25 or 100-lb. keg from your supply house or if necessary direct from us.

SMOOTH-ON MFG. CO., Dept. 66, 570 Communipaw Ave., Jersey City, N. J.

Please send the SMOOTH-ON HANDBOOK.

Name _____

ADDRESS _____

_____

1-6-39 _____

Do it with **SMOOTH-ON**

DRAGON COMPOSITION C-U-P-S

(For Deep Wells)

Executives — Who've Climbed Thru the Ranks — Know that Efficient *Little Things* Often Avoid Big Leaks!

Final **responsibility of pumping oil being on the CUP, surely the matter of selecting this *small item* is important enough to claim *executive* attention.**

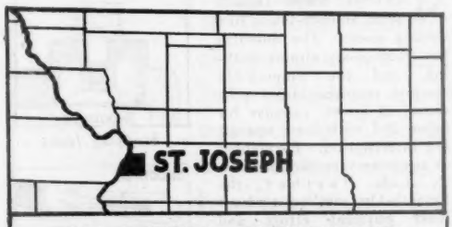
Dragon Valve and Pump Cups—Composition or Leather—for deep or shallow wells, perform longer —*dependably*. Since 1912, we have specialized in *one job:* Building cups to deliver *extra* service *on the job*. Specify "Dragon—for the longer run".

"On Duty or in Competition— As Fearless as the Dragon."

The Dragon Mfg. Co.,
Marietta, Ohio

NOBS COMPOSITION C-U-P-S

(For Shallow Wells)



IN THE CENTER OF THE NEW MISSOURI PLAY

STOP AT THE LEADING HOTEL IN ST. JOSEPH, MO. THE ROBIDOUX

Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.

Judith Basin County

Fletcher E. Hunt No. 1 Hoven, SE NE NW Sec. 30-14n-15e. Spd. and S.D.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

Stockholders of the Homestake Oil Co., a pioneer in the Montana oil development, voted at a meeting held in Great Falls on December 28 to sell its two producing properties in the Cat Creek field to the Continental Oil Co. The terms of the sale were not made public other than it was part cash and part out of production, with the Homestake company retaining a royalty of 6¼ per cent on any deep sand production which may be developed in the future.

The deal gives the Continental practically all the producing properties in the field and will enable it to operate the field in effect as a unit. A new system of repressuring probably will be installed. The Continental company, through its predecessors, in recent years has taken over the holdings of the Frantz Corp., the Elk Basin Oil Co., the Midnorthern Oil Co. and other properties.

H. Clark Rowland No. 1 Brundidge-Mink, SE NW Sec. 35-14n-25e. Skdg. rig from No. 1 Kalispel.
Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. Drlg. 800 ft.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Richland County

W. M. Fulton No. 1 Richardson, SW SW SE Sec. 29-26n-52e. Drlg. 540 ft.; small S.W. at 435 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. Drlg. 1,800 ft.
Gulf States Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. S.D. 2,525 ft. until spring.

Toole County

Kevin-Sunburst had two completions and three new operations. The Mosby Oil Co. No. 1 Pederson, NW NE SW Section 7-35n-2w, was dry and abandoned at 1,782 feet. It was barren in the contact at 1,710-60 feet and deeper drilling was unsuccessful.

Henry Vander Pas No. 2 Thompson, 200 feet out of the NW cor. Section 33-35n-3w, is pumping 25 bbls. per day naturally and showing no water. It may be acidized later. It had the Sunburst at 1,395-1,425 feet and the contact at 1,715-20 feet. Oil rose 1,200 feet in the hole.

Morton & Parrent No. 1 Osthoff, SW SW SE Sec. 1-35n-3w. R.O.G. (first report).
Kippen Oil & Gas Co. No. 1 Thompson, C NE SE Sec. 28-34n-1e. Spdg. (first report).
Prevel & Shea No. 1 Govt., CSL NW SW Sec. 11-35n-3w, R.U. (first report).
Sid Porter No. 1 Bradley, SE cor. Sec. 3-34n-2w. Drlg. 400 ft.
Neptune O. & G. Co. No. 7 Seabrook, NW NW SW Sec. 19-35n-2w. Drlg. 1,535 ft.; Sunburst dry at 1,313-18 ft.
Superior Pet. Co. No. 4 Goeddertz, CEL SE SW Sec. 12-35n-3w. T.D. 1,523 ft.; swb. 5 B.O.P.D.; will D.D.
Big West Oil Co. No 5 Engle, CEL SW SW Sec. 1-35n-3w. Drlg. 1,835 ft.; Madison 1,822-35 ft.
Kluth et al No. 2 Gunderson, SW cor. Sec. 18-35n-2w. T.D. 910 ft.; 8¼-in. on bttm.
C. L. Smith, Agt., No. 1 Govt., SW SE NW Sec. 13-35n-2w. T.D. 1,030 ft.; fsg.
Aspen O. & R. Co. No. 1 Govt., C NE SE Sec. 25-36n-3w. S.D. 2,050 ft.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. T.D. 2,318 ft.; cmtd. and reacid.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. T.D. 1,665 ft.; cmtd. 7-in. on bttm.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 1,990 ft.; rng. 6¼-in.

UTAH

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. Drlg. 2,254 ft.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,110 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

California Fields

(Continued from Page 78)

in the Blackwells Corners area and it was abandoned as a dry hole in the Eocene at 8,296 feet.

In the Buttonwillow district of Kern County, California Lands, Inc., has reached a depth of 10,695 feet in No. 1 Salisbury, a wildcat in Section 7-29-24.

The Texas Co. has abandoned No. 1 Camp-West-Lowe, in the Fruitvale district of Kern County, in Section 7-29-27, as a duster at 10,156 feet, but has moved the derrick and equipment to Section 35-28-26, where No. 35-1 Kern County Land will be drilled 410 feet south and 50 feet east of the north quarter of the section.

RYERSON Certified STEELS

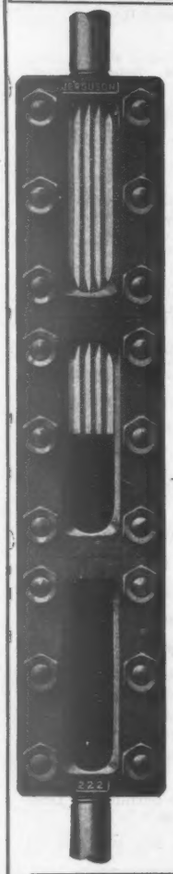
IMMEDIATE STOCK SHIPMENT

Ryerson Certified Steels represent the highest quality obtainable in each class and type of material. Stocks include: alloy and tool steels, Allegheny stainless, structurals, bars, shapes, plates, sheets, shafting, tubing, reinforcing bars, bolts, nuts, welding rod, building products, metal working tools, etc.

Write for the Ryerson Stock List.

JOSEPH T. RYERSON & SON, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Cleveland, Detroit, Buffalo, Boston, Philadelphia, Jersey City. Offices at: Tulsa, Kansas City, Minneapolis.

JERGUSON



REFLEX GAGES
Accurate Long-Lived Trouble-Free

For years Oilmen have specified JERGUSON GAGES because they afford maximum efficiency at all times.

Not affected by high temperatures or high pressures.

Easy to install . . . easy to read . . . because the . . .

Empty space shows WHITE

Liquid level appears BLACK

Ideal for gasoline, kerosene, oil, etc . . . no matter what the color of liquid.

Furnished with or without valves for every type of service.

Jerguson Gages are best By every real test

Catalog on request

JERGUSON GAGE & VALVE CO.
85 FELLSWAY
SOMERVILLE, MASS.

ST. LOUIS HOSPITALITY

Is at its best in this comfortable, conveniently located hotel, where service and good food are a byword.

HOTEL Lennox
9TH AND WASHINGTON
Over 50% of all rooms $3.50 or less single; $5.00 or less, double

Michigan Field Report

By O. C. PRESSPRICH

Completions at a Low Point; New Pool in Allegan County

SAGINAW, Mich., Jan. 2.—Michigan drilling activity slumped to a new low point during the past week as shutdowns for the Christmas holiday combined with the heaviest snowfall of the winter to retard completions. Two wells were completed in Allegan County's fields in Southwest Michigan—one indicating a prospective new pool in Salem Township. Two gassers were added in proven gas territory, together with a semicompletion and a deepening job, both in Redding Township's Clare County oil pool.

The possible new Salem pool is about 3 miles northeast of the old pool, in territory not previously explored. Operators regarded the wildcat as a forerunner of an entirely new pool. The well flowed 150 bbls. naturally in 24 hours.

Clare County operators who instituted a 50-bbls.-a-day-per-well proration curb the previous week, were reported generally observing the restriction. The only activity in Clare last week was a semicompletion scheduled for further testing. One of the previous week's favorable producers was deepened three feet to increase the flow.

Allegan County

Overisel Township (4n-14w)—One of the two Allegan completions was in the Diamond Springs sector, Muskegon Development Co. No. 5 Berens, W half NW SE Section 36, acidized to 100 bbls. per day.

Salem Township (4n-13w)—What operators regarded as a new Salem pool was brought in by Gordon & Wilson No. 1 Joppul, SE NE NE Section 11, a wildcat which flowed 150 bbls. a day. The well is approximately 3 miles northeast of the old Salem pool in Section 21. Formations were reported slightly higher than in the older pool. Extensive exploration of the area was not believed likely until spring in the face of low crude prices prevailing in the southwest area.

Clare County

Grant Township (17n-4w)—A favorable gas well in proved territory was added at American Producing Co. No. 1 Doherty, C SW SW Section 35, gauged at 3,800,000 cu. ft. daily.

Redding Township (19n-6w)—Socony-Vacuum's No. 2 Fell, NE NE SE Section 33, in a semi-completed state gauged 35 bbls. in 48 hours, and was scheduled to be tested further. The well is an offset to a big producer of Daily Crude Oil Co., and was reported to have tapped production near the water level. While no water mingled with the oil, operators were doubtful of further testing, due to the proximity of the water zone. Talbot Oil Co. No. A-1 State-Redding, C SE SW Section 28, an important well of the previous week, was deepened 3 feet to 3,885, resulting in increased production gauged at more than 40 bbls. hourly The pay zone is unusually thick in the vicinity, with little danger of running into water, operators said.

Crawford County

South Branch Township (25n-1w)—Weber Oil Co. No. 1 Floster, NW SE NE Section 31, another attempt to prove oil production in far north counties, failed last week.

Isabella County

Fremont Township (13n-5w)—Bell & Marks No. 1 Fox, NE NE NE Section 8, failed as a commercial producer and will be abandoned.

Montcalm County

Home Township (12n-6w)—The largest gasser developed in recent months was brought in at L. T. Barber's No. 1 Deja, NE SW SW Section 23, gauged at 12,000,000 cu. ft. The well is in proved territory.

Ottawa County

Robinson Township (7n-15w)—Gordon Oil Co. No. 1 Homick, NW NE NW Section 23, was completed dry.

Van Buren County

Bloomingdale Township (1s-14w)—For the first time in many weeks the Bloomingdale pool—fastest growing in Michigan, and consistently the leader recently with new completions—failed to record a producer. J. V. Wicklund Development Co. No. 1 School, NW SW NW Section 16, was the only completion, and was dry.

Waverly Township (2s-14w)—Lima Drilling Corp. No. 1 Firbusch, SE NW NW Section 14, was completed dry.

Kansas Fields

(Continued from Page 66)

Section 23-24-11w, Zenith field, Stafford County, found Misener sand at 3,806-14 feet, total depth, pumped 142 bbls. of oil in eight hours and was rated potentially at 425 bbls. of oil daily.

Atlantic Refining Co. and others No. 1 Porter, SE cor. Section 11-24-14w, Wise area, found Lansing lime at 3,601 feet, was shot at 3,642-3,843 feet, but was dry and abandoned at 3,855 feet, total depth.

E. H. Moore, Inc., No. 9 Johnson, NW SE SE Section 13-24-11w, Zenith field, was building rotary rig. Same operator's No. 10 Johnson, SW NE SE Section 13-24-11w, was a rotary rig.

Butler-Sumner Counties

Rex & Morris No. 1-A Sutter, NE NE SE Section 7-28-7, Butler County, topped Bartlesville sand at 2,115 feet, was bottomed at 2,650 feet, and pumped 25 bbls. of oil in 24 hours.

Shell Petroleum Corp. No. 2 Scroggins C, SE NW SW Section 14-32-2e, Oxford field, Sumner County, had sand at 1,179-1,203 feet, total depth, pumped 4 bbls. of oil and 10 bbls. of water in 12 hours, and was completed for 8 bbls. of oil daily.

Scott Counties

Atlantic Refining Co. No. 2 Mark B, C W half SW Section 14-20-33w, Shallow Water pool, Scott County, entered Mississippi lime at 4,604 feet, was bottomed at 4,691 feet, pumped 250 bbls. of oil in eight hours and made potential of 749 bbls.

New Operations

In Reno County, Westgate-Greenland Oil Co. No. 1 Hegart Estate, NE NE SW Section 36-22-5w, Buhler pool, was moving in material.

In Pratt County, Skelly Oil Co. No. 1 Miller, NE NW NW Section 36-27-11w, Cunningham area, was rigging up rotary.

In Barber County, Pryor & Lockhart No. 1 Gant D, NW cor. Section 17-31-13w, Lake City pool, was a location.

Reciprocal Buying Scored As Business Abuse

J. F. Lincoln, president of the Lincoln Electric Co., in a letter to The Oil and Gas Journal says:

"Under the attack on business by the present administration we manufacturers like to feel that we are martyrs. We know the attack is unjustified, in general. Government, however, has uncovered some abuses which are real enough to justify action in some cases.

"One of these abuses which as yet has not been the subject of regulation but which will and perhaps should be, is that of reciprocal buying. This exploded theory is continued only because of its age, not because anyone in industry finds it a satisfactory method of placing business.

"Industry, at great expense, sets up a purchasing department, an inspection department and an engineering department, to produce material of proper price and quality. After having done this they put in a reciprocal relations department who override the decisions of the buyer, the inspector and the engineer, and place business merely because of the suppliers, results in frequent strained industrial relations since no one can buy in a volume to satisfy the reciprocator. Not only that, but the distribution is never fair from the seller's point of view.

"Reciprocal buying results in higher prices since the reciprocator cannot get the best price available. It results in lower quality since the reciprocator cannot insist on quality. It results in lack of standardization which enormously increases cost of upkeep.

"I can see the joy with which a LaFollette, or a Roosevelt, or other muckrakers, will pounce on this industrial foible to show how incompetent is the management of American business. With that proof the New Deal can show it is necessary for Government to guide, direct and protect industry, and thus only can it be kept solvent. As a matter of fact, who can show that Government is not right in such conclusions? Result: One law, a million new jobs and a billion new taxes.

"The worst of it is that in this case the Government would have a perfectly clear case to prove its point. No one can take the untenable position that reciprocal buying is anything but asinine and wasteful. However, in the hands of governmental regulation for its elimination, a waste will be turned into regimentation from which industry perhaps can never recover."

Ohio Fields

(Continued from Page 61)

In Stark County, Jackson Township, Ohio Fuel Gas Co. No. 3 Society of Precious Blood, Section 12, had an open flow of 400,000 cu. ft. of gas from the Clinton sand at 4,370-82 feet.

In Washington County, Grandview Township, C. D. Uhl No. 8 J. A. Huffman, Section 22, made 5 bbls. of oil the first 24 hours after a shot at 778-86 feet. In Marietta Township, Hupp & Yerian No. 11 Washington County Infirmary, Section 11, was dry at 498 feet. In Muskingum Township, High Ridge Gas Co. No. 6 R. J. Augenstein, Lot 6, had only a small showing of oil in the lime at 1,273 feet; abandoned.

In Wayne County, Canaan Township, David Shaeffer No. 2 J. M. Wilds, Section 22, was deepened from the first Clinton to the second Clinton for a 5-bbl. oil producer; total depth 3,273 feet.

Lima Field

In northwestern Ohio the Sun Oil Co. is drilling 200 feet in the Trenton lime in its No. 2 Mary Crum in Seneca County, Clinton Township, Section 7. Top of the Trenton was found at 1,465 feet. Two other Green sand tests are shut down. In Hancock County, Clinton Township, Travelers Oil Co. No. 1 Jacob McCauley, is still having casing trouble. In Wood County, Portage Township, Goodwill Oil & Gas Co. No. 1 Lester Shinew is standing at 475 feet in the Trenton.

North Louisiana, Arkansas

By
GEORGE WEBER

Shreveport Field Extended 1¼ Miles by 480-Bbl. Well

SHREVEPORT, Jan. 2.—The extension of the Shreveport field, 1¼ miles to the northeast, was the principal development in a generally listless week of activity in the North Louisiana and Arkansas section. Two new producers in the Magnolia field of Columbia County, Arkansas, added to that field's importance. An interesting test is attracting attention to the Carterville shallow gas field of northwest Webster Parish, as the Magnolia Petroleum Co. No. 1-C Pardee Lumber Co., a deep test is being shot with nitroglycerine in the lower Glen Rose formation. Stanolind Oil & Gas Co. and Hunt Oil Co. No. 1 Pardee-Coffee, showed for a good producer early in the week, in the Cotton Valley field.

Shreveport Field

The outstanding extension to the Shreveport field since it was discovered was Harry Hanbury No. 1 Lowe, located in the SE SW Section 23-18-14, over a mile north and east of the R. E. Allison No. 1 Ellerbee, discovery well. It cored Pettit lime, showing porosity, at 5,552½-56½ feet. A string of 5½-inch casing was set at 5,551 feet, and the well was brought in through a three-quarter-inch choke, making an estimated 20 bbls. per hour of 44 gravity oil. The casing pressure stood at 300 lbs., and there was no tubing pressure. The well came in after a brief swabbing, and after cleaning made pipe line oil.

Two other wells are being completed in the new field, both in proven territory. R. E. Allison Nos. 4 and 5 Ellerbee are both completed, with the former making 8 bbls. per hour through a one-eighth-inch choke and the second well not yet gauged.

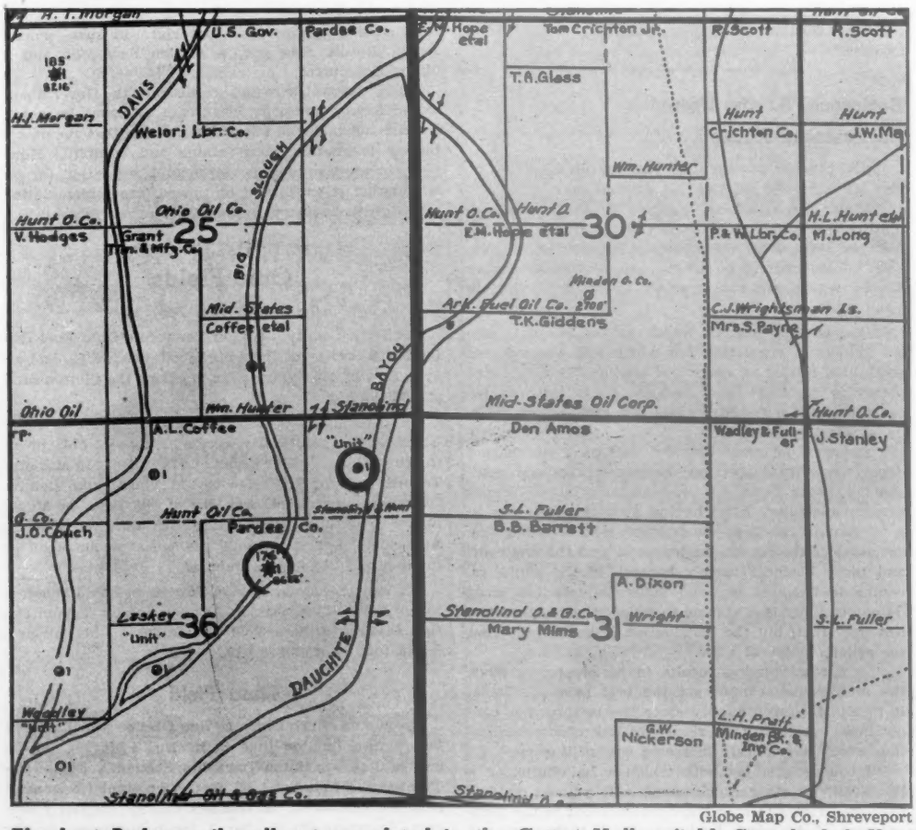
Completion of the Hanbury No. 1 Lowe adds considerably to the prospective importance of the field, in contrast to the developments of last week, when R. E. Allison No. 1 Jones & Mabry, a north outpost, was abandoned, limiting the field in that direction.

Cotton Valley

The Stanolind Oil & Gas Co. and Hunt Oil Co. No. 1 Pardee-Coffee came in as one of the best wells yet completed in the Cotton Valley field. The test cored the "D" sand at 8,488-8,508 feet, showing oil, and Bodcaw sand was penetrated at 8,580-8,626 feet. A string of 7-inch casing was set at 8,612 feet, and the well gauged an initial production of 73 bbls. the first hour through a half-inch choke. A 5-hour test showed 863 bbls. of distillate. Gas-oil ratio was 967 cu. ft. per bbl. Tubing pressure was 1,125 lbs. and casing pressure 1,250 lbs., and closed-in pressures were 1,500 lbs. on the tubing and 1,650 lbs. on the casing.

A southwest outpost test, the Oliphant Oil Co. No. 2-B Stewart, after showing salt water in the "D" sand, and poor porosity in the Bodcaw sand, was deepening to the Davis sand, and developments in the important outpost test are being watched with interest.

The Sibley wildcat, Union Producing Co. No. 1 Walker Unit, which last week looked like a possible producer in the Jeter horizon of the lower Glen Rose, was deepened after a drill stem test failed, and was drilling below 6,200 feet at latest reports.



Globe Map Co., Shreveport

The best Bodcaw oil well yet completed in the Cotton Valley field, Stanolind & Hunt No. 1 Pardee-Coffee, gauged 73 bbls. per hour through half-inch choke. The well is northeast of the discovery well in the oil zone of the deep lower Marine sand

Carterville Test

The Magnolia Petroleum Co. No. 1-C Pardee, a deep test in the old shallow Carterville field, is at an important stage. The test was temporarily abandoned several days ago at total depth of 10,070 feet, but last week was re-entered, and swabbed down. Operators this week are shooting the basal Glen Rose with 100 quarts of nitroglycerine at 5,930-86 feet where a show of oil was had.

Magnolia Pool

In Columbia County, Arkansas, the Magnolia field added two more good producers as Petroleum Finance Co. No. 1 Barnett, a south offset to the discovery well and the Southwood Oil Co., Inc. No. 1 Garrett, were completed for initial production gauges of 30 bbls. hourly, each. Both were on inside locations, so no field extensions in the steeply dipping lime structure were effected.

Production by Pool

Estimated daily gross production all companies week ending December 30, 1938:

NORTH LOUISIANA

Bellevue	710
Caddo light	4,055
Caddo heavy	2,580
Converse	530
Cotton Valley heavy	95
Cotton Valley light	*10,215
Cross Lake	1,200
De Soto & Red River	1,180
Elm Grove	280
Haynesville	2,750
Holly	95
Homer	2,630
Lisbon	4,940
Pleasant Hill	100
Rodessa	28,945
Sarepta-Carterville	†400
Sligo	645
Sugar Creek	300
Urania	2,625
Zwolle	2,500
Total	66,775

SOUTH ARKANSAS

Buckner	1,440
Champagnolle	1,710
El Dorado	1,740
Lisbon	260
Miller County	345
Nevada	615
Rodessa	4,620
Schuler	17,485
Smackover light	1,960
Smackover heavy	15,395
Stephens	540
Troy	900
Urbana	1,120
Village	1,560
Total	49,690

Texas side of Rodessa field 29,805 bbls. daily.
*4,360 bbls. is distillate.
†100 bls. is distillate.

West Texas Fields

(Continued from Page 69)

Co. producer drilled in 1919 with pay coming from the 4,550-foot level. About 2 miles northwest of production in the Bryson pool, Ohio Oil Co. staked a test in the A. Bust Survey, Abstract 1904. G. M. Gillispie announced a location in the southwest part of Section 3345, T.E.L. Survey, and about 2½ miles southeast of Jermyn. This well will be drilled just southwest of a small pumper completed by the same operator last year and a quarter-mile southwest of a dry hole he drilled to 3,250 feet.

In Brown County, George Christie staked a test in the Patrick Furlong Survey, just south of the Eastland County line. The test is on a 120-acre tract in the Henslee lands and is between the Cross Cut pool to the west and the Blake pool on the east. Production

6 to 16 HOURS CUT from wax-sweating schedules

Plant reduces cycle to 24 hours . . . increases yield of higher quality paraffin . . . saves steam—with the aid of Taylor Automatic Time-Schedule Control

DOWN in the Southwest a large refinery has added to its records convincing proof of the value of precision temperature control.

The problem involved regulation of wax sweaters so as to eliminate fluctuating temperatures, which retards the sweating process and reduces wax yield. Taylor Engineers, working with those from the refinery, found a solution in a system using Time-Schedule Controllers. An immediate result was an increased production of higher quality paraffin with a uniform melting point. The Taylor Controllers regulated the complete sweating operation, automatically raising the temperature the number of degrees per hour demanded by the processing schedule. AND THEY CUT THE CYCLE DOWN TO 24 HOURS, a saving of from six to sixteen hours. They eliminated errors due to changing steam pressures and to other variables difficult to regulate accurately under hand control.

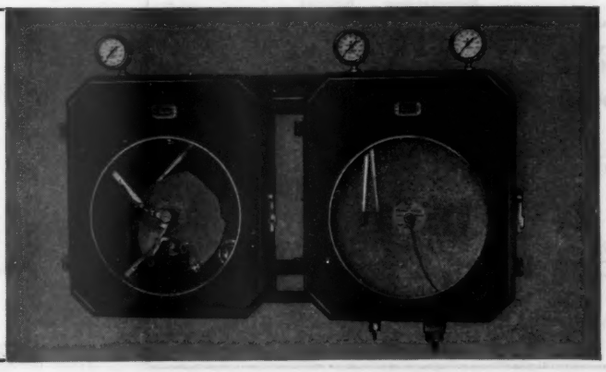
Besides helping to produce a better product at lower cost, this installation demonstrated again the extreme adaptability of Taylor Control Instruments to meet the refiner's needs.

Every day, in many of the country's leading plants, different types of Taylor Fulscope Controllers are maintaining precision control of temperature, pressure, flow and liquid level under the most exacting operating conditions existing today.

An outstanding example of this was the part recently played by Taylor Instruments as part of a large atmospheric and vacuum distillation unit. This unit started operating in 1936 and remained on stream for 23½ months, a world's record for continuous runs. The completely satisfactory performance of Taylor Control during this operation led to its specification in similar units in other refineries.

Whether you are planning to modernize equipment, enlarge your plant, or build a new refinery, let Taylor Engineers cooperate on the control of temperature, pressure, rate of flow or liquid level. Get in touch with a Taylor Representative, or write for information to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada. Sales offices in Tulsa, Oklahoma; San Francisco, Calif.; and other leading cities. Manufacturers in Great Britain—Short & Mason, Ltd., London, Eng.

Precise control of temperature in the complete wax-sweating cycle is the result of using a Taylor Time-Schedule Controller like this. This instrument assures uniform processing according to a predetermined schedule. It makes certain that each operating cycle will be identical. In the installation mentioned above, it helped to cut the sweating schedule down to 24 hours. Under manual control this time ran from 30 to 40 hours.



Taylor

Indicating · Recording · Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

will be sought from around 1,350 feet, with the well being contracted to 1,500 feet.

WEST TEXAS FIELD COMPLETIONS

(24- hour production tests)

Andrews County

H. C. Wheeler No. 1 White & Shelton, dry and abandoned at 4,731 feet.

Crane County

Gulf Oil Corp. No. 9 Waddell, 5,935-6,006 feet, 2,768 bbls.

Crockett County

Gilcrease Oil Co. No. 1-13 Humble-University, 1,356-1,412 feet, 65 bbls.

Ector County

Sinclair-Prairie No. 3 University, 3.445-3,650 feet, 1,404 bbls. Broderick & Calvert No. 11 J. E. Witcher, 4,215-4,327 feet, 738 bbls. Arrow Drilling Co. No. 5 H. C. Foster, 4,219-4,300 feet, 792 bbls. Stanolind Oil & Gas Co. No. 15-B E. F. Cowden, 4,003-4,159 feet, 1,182 bbls. Hilton Oil, Inc., No. 2 J. E. Witcher, 3,995-4,175 feet, 1,748 bbls. Shell Petroleum Corp. No. 6 Slator, temporarily abandoned at 216 feet. Gulf Oil Corp. No. 142 Goldsmith, 4,130-4,206 feet, 940 bbls. Phillips-Pure No. 48 Clyde Cowden, 4,132-80 feet, 1,406 bbls. Phillips-Pure No. 50 Clyde Cowden, 4,125-75 feet, 1,776 bbls. Gulf Oil Corp. No. 144 Goldsmith, 4,150-4,200 feet, 2,544 bbls. Broderick & Calvert No. 1 O. B. Holt, 4,195-4,389 feet, 2,300 bbls. Roy Ranger No. 1 T. G. Hendrick, temporarily abandoned at 275 feet.

Howard County

Jamieson and Pollard & Forster No. 1 Chalk, 2,765-2,895 feet, 1,752 bbls. H. L. Lockhart No. 4 R. Scott, 2,648-2,851 feet, 1,459 bbls. Magnolia Petroleum Co. No. 8 Hyman-Chalk, 2,765-2,926 feet, 1,462 bbls. Shasta Oil Co. No. 3 TXL, 2,655-2,820 feet, 1,485 bbls.

Pecos County

Aeor Gas & Refining Co. No. 7 Gregg, abandoned location. British American Oil Co. No. 6 Payton, 2,018-2,101 feet, 168 bbls. Sun and Atlantic No. 7 Peyton, 1,920-2,001 feet, 50 bbls. Two States No. 2-A Magnolia, 1,770-1875 feet, 9 bbls.

Gaines County

A. G. Carter No. 1-E Wasson, 4,926-5,030 feet, 1,178 bbls. Continental Oil Co. No. 3-49 A. L. Wasson, 4,900-86 feet, 1,016 bbls.

Taylor County

Lawson & Leavall No. 1 B. E. Bell, dry and abandoned at 2,360 feet.

Tom Greene County

B. C. Mann No. 1 Ike Funk, dry and abandoned at 1,438 feet.

Upton County

Basin Oil Co. No. 7-A Baker, 2,260-95 feet, 1,193 bbls. Shell Petroleum Corp. No. 2 Baker, 2,243-60 feet, 360 bbls. Hancock & Knox No. 3 Republic-Baker, 2,245-93 feet, 2,236 bbls.

Ward County

Gulf Oil Corp. No. 111 Estes, 2,495-2,670 feet, 1,457 bbls. Gulf Oil Corp. No. 116 Hutchins, 2,588-2,770 feet, 469 bbls.

Winkler County

Magnolia Petroleum Co. No. 204 Walton, 3,220-80 feet, 920 bbls. Magnolia Petroleum Co. No. 205 Walton, 3,220-80 feet, 1,142 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Callahan County

Johnson No. 1 C. Smith, dry and abandoned at 373 feet.

Comanche County

McCarter No. 1 T. Smith, 594-97 feet, 5 bbls. Plains Production Co. No. 1 Stamey, dry and abandoned at 420 feet.

Jones County

Sandy Ridge Oil Co. No. 4 Steffens, 1,870-93 feet, 321 bbls.

Palo Pinto County

S. Fuller No. 1 Texas Farms, abandoned location.

Shackelford County

H. Beaumont No. 4 Harbough, 399-401 feet, 2 bbls. Butler No. 4 Nail, 1,410-15 feet, 24 bbls. Iron Mountain Oil Co. No. 5 Ivy, dry and abandoned at 3,225 feet. Iron Mountain Oil Co. No. 1 Green, dry and abandoned at 1,801 feet.

Taylor County

Snoddy No. 11 Parmelly, dry and abandoned at 2,504 feet.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Gray County

Magnolia Petroleum Co. No. 227 fee, 2,830-90 feet, 346 bbls. Oklahoma State Oil No. 3 Morse, 2,530-90 feet, 80 bbls. Sinclair Prairie No. 7 P. A. Coomley, 3,096-3,208 feet, 458 bbls.

Hutchinson County

Drilling & Exploration Co. No. 26 E. E. Watkins, 3,000-30 feet, 466 bbls. Gulf Oil Corp. No. 87 Dial, 2,985-3,099 feet, 285 bbls. Midstates Oil Co. No. 23 Whittenburg, 2,902-40 feet, 742 bbls. Phillips Petroleum Co. No. 18 J. J. Perkins, 2,910-34 feet, 466 bbls.

Rocky Mountain Runs

Production estimates for week ending December 31:

WYOMING

	Barrels
Salt Creek	15,390
Big Muddy	1,200
Badger basin	180
Byron	1,550
Cody dome	50
Cole Creek	110
Dallas Derby	350
Dutton Creek	50
Elk basin	580
Frannie	1,860
Garland	1,750
Grass Creek	1,930
Hidden dome	60
Hudson	230
LaBarge	870
Lance Creek	12,680
Lost Soldier	1,990
Mahoney	280
Medicine Bow	2,290
Mule Creek	200
Oregon basin	2,200
Osage	800
Quealy dome	640
Rock River	2,150
Spindletop	20
Poison Spider	250
Teapot	10
Wertz	1,280
Total Wyoming	50,960

MONTANA

Border	40
Cat Creek	550
Cut Bank	7,380
Dry Creek	400
Kevin-Sunburst	3,460
Lake basin	10
Pondera	520
Total Montana	12,360

COLORADO

Florence	120
Fort Collins and Wellington	330
Wilson Creek	290
Iles dome	2,110
Moffat	270
Orchard	30
Rangely	90
Tow Creek	150
Price	550
Total Colorado	3,940

NEW MEXICO

Cooper	4,350
Eaves	830
Eunice	22,460
Hardy	2,720
Hobbs	11,860
Jal	910
Langlie	4,430
Lynch	500
Lynn	790
Mattix	3,120
Monument	22,800
North Lynch	40
Penrose	5,490
Rhoades	150
Skelly	1,820
South Eunice	2,960
Vacuum	5,840
Empire State	100
Artesia-Maljamar	5,970
Getty	100
Hogback	200
Rattlesnake	600
Table Mesa	90
Total New Mexico	98,130
Total Rocky Mountain region	165,390

CHEMICAL REFINING OF PETROLEUM

By

V. A. KALICHEVSKY and B. A. STAGNER

An authoritative book on a field which has long felt the lack of such a volume.

CONTENTS

- Treatment With Sulphuric Acid
- Sulphuric Acid Sludge From Petroleum Refining
- Treatment With Alkaline Reagents
- Sweetening Operations and Elimination of Elementary Sulphur
- Refining by Adsorption
- Use of Solvents in Refining
- Reduction of Total Sulphur in Light Petroleum Distillates
- Detonation and Antidetonants
- Oxidation and Reduction Reactions
- Gums in Cracked Petroleum Products
- Inhibitors of Atmospheric Oxidation of Petroleum Products
- Deterioration of Lubricating and Similar Oils
- Miscellaneous Refining Processes and Reagents
- Supplementary List of Patents on Petroleum Refining

$7.00 postpaid

Mail your order and check to the Book Department

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Douglas & Stratton, No. 1 Los Alamos, S. Barbara	8- 8-33	7,237	bail water
Richfield Oil, No. 1 Tinquaic, Foxen Can., S. Barb.	36- 9-32	2,896	sd. sh. drig.
Ventura Drlg., No. 1 Ojai, Ventura	10- 3-23	2,230	sd. sh. drig.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,821	idle
Claran Oil, No. 1 Hardison, Sespe, Ventura	22- 4-20	2,111	sd. sh. drig.
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,550	O.S. drig.
Ivers H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	460	sd. sh. drig.
Speik Oil, No. 2 Speik, Sespe, Ventura	33- 5-19	3,635	pump 110 b.d.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	1,990	sd. sh. drig.
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,390	idle
Texas Co., No. 136 Shiells, Shiells Canyon, Ventura	4- 3-19	754	sd. sh. drig.
Brain, P., No. 1 Crosby, Hopper Canyon, Ventura	14- 4-19	1,151	idle
Continental Oil, No. 10 Grubb, San Miguelito, Vent.	24- 3-24	3,197	sd. sh. drig.
C. C. M. Oil, No. 6-A Hobson, Padre Canyon, Vent.	15- 3-24	5,426	flow 97 b.d.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	7,831	sd. sh. drig.
Tide Water A. O., No. 36 V.L.W., Vent. Ave., Vent.	25- 3-23	8,698	sd. sh. drig.
Tide Water A. O., No. 40 V.L.W., Vent. Ave., Vent.	25- 3-23	5,192	sd. sh. drig.
Tide Water A. O., No. 81 Lloyd, Vent. Ave., Vent.	27- 3-23	8,630	sd. sh. drig.
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	27- 3-23	5,570	sd. sh. drig.
Tide Water A. O., No. 126 Lloyd, Vent. Ave., Vent.	27- 3-23	9,760	hd. sh. drig
Tide Water A. O., No. 128 Lloyd, Vent. Ave., Vent.	27- 3-23	8,190	hd. sh. drig.
Tide Water A. O., No. 134 Lloyd, Vent. Ave., Vent.	27- 3-23	8,339	redrlg. 5,370
Tide Water A. O., No. 8 Hartman, Vent. Ave., Vent.	22- 3-23	1,251	sd. sh. drig.
Shell Oil, No. 97 Taylor, Ventura Ave., Ventura	21- 3-23	7,370	sd. sh. drig.
Shell Oil, No. 32 Edison, Ventura Ave., Ventura	21- 3-23	7,860	cleaning out
Shell Oil, No. 33 Edison, Ventura Ave., Ventura	21- 3-23	....	bldg. rig
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	6,770	sd. sh. drig.
Alliance Pet., No. 3 Hisey, Ventura Ave., Ventura	22- 3-23	....	rigging up
Stekoll, Harry, No. 1 Sexton, Vent. Ave., Vent.	30- 3-22	9,525	cleaning out
Belridge Oil, No. 27-4, North Belridge, Kern	27-27-20	8,515	flow 2,980 b.d.
Belridge Oil, No. 35-26-A, North Belridge, Kern	35-27-20	5,798	br. sh. drig.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	7,353	sd. sh. drig.
Belridge Oil Co., No. 28-2, North Belridge, Kern	28-27-20	5,294	sd. sh. drig.
Tide Water A. O., No. 23-3, North Belridge, Kern	22-27-20	3,040	sd. sh. drig.
Richfield Oil, No. 3, North Belridge, Kern	22-27-20	1,787	sd. sh. drig.
Rufener, Jules, No. 1 Julianne, Round Mount., Kern	2-29-29	1,442	dry; abd.
Shell Oil, No. 1 S.P.L., S. Round Mountain, Kern	7-29-30	2,076	sd. sh. drig.
Helm & Smith, No. 11-A Kern, Kern River, Kern	34-28-28	616	sd. sh. drig.
O. F. W. Oil, No. 1 Milburn, Mount Poso, Kern	27-26-28	1,414	pump 20 b.d.
Ring Oil, No. 5 Shapiro, Mount Poso, Kern	32-27-28	1,712	pump 380 b.d.
Angle, D. D., No. 2 Claffin, Mount Poso, Kern	1-27-27	3,430	sd. sh. drig.
Richfield Oil, No. 1, Union Ave., Kern	5-30-28	8,790	sd. sh. drig.
O'Reilly, F., No. 1 Berree, Edison, Kern	5-30-29	2,502	tested wet
Wood-Callahan Oil, No. 4 Community, Edison, Kern	21-30-29	2,515	sd. sh. drig.
Renner, G. E., No. 2 R.H.L., Sivert, Kern	27-30-30	2,310	cleaning out
Continental Oil, No. 4-A KCL, Wasco, Kern	8-27-24	2,563	sd. sh. drig.
Standard Oil, No. 2 Mushrush, Wasco, Kern	7-27-24	3,492	sd. sh. drig.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	10,414	sd. sh. drig.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	11,593	flow 1,740 b.d.
Union Oil, No. 7-34, KCL, Rio Bravo, Kern	34-28-25	11,250	sd. sh. drig.
General Pet., No. 3 Wagoner, Rio Bravo, Kern	35-28-25	11,340	sd. sh. drig.
General Pet., No. 3 Van Ness, Rio Bravo, Kern	2-29-25	7,996	sd. sh. drig.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,903	P. B. 11,598
Standard Oil, No. 11-16, KCL, Greeley, Kern	20-29-26	8,686	sd. sh. drig.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	8,109	will deepen
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	10,550	sd. sh. drig.
Superior Oil, No. 12 KCL, Greeley, Kern	3-30-26	9,860	sd. sh. drig.
Shell Oil, No. 81-29-B, KCL, Ten Section, Kern	29-30-26	6,171	sd. sh. drig.
Shell Oil, No. 34-14-A, KCL, Canal, Kern	14-30-25	7,586	sd. sh. drig.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	10,430	sd. sh. drig.
Ohio Oil, No. 10-E, KCL, Canal, Kern	14-30-25	7,380	sd. sh. drig.
Standard Oil, No. 1 Rio Bravo Fee, Canal, Kern	12-30-25	8,091	sd. sh. drig.
Richfield Oil, No. 1, KCL, Tupman, Kern	32-30-25	8,677	fish liner
Wilbent Oil, No. 2 Royer, Midway-Sunset, Kern	7-11-23	9,005	bridge 4,443
Standard Oil, No. 201-13-D, Midway-Sunset, Kern	13-32-24	3,602	P. B. 3,205
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	5,035	rig to pump
National Oil, No. 31 Midway, Midway-Sunset, Kern	35-32-23	2,040	rig to pump
Standard Oil, No. 7-31 Western, McKittrick, Kern	7-30-22	2,050	blew out
Wesco Pet., No. 1 West, McKittrick, Kern	34-30-22	2,774	sd. sh. drig.
Hall-Baker, No. 1 Williams, McKittrick, Kern	2-30-21	1,367	sd. sh. drig.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	9,272	sd. sh. drig.
Tide Water A. O., No. 2 S.P., Tejon Ranch Kern	15-11-19	5,990	hd. sh. drig.
Progressive Oil, No. 3 East, Coalinga, Fresno	20-19-15	569	sd. sh. drig.
Gen. Pet., No. 101 Esperanza, Coalinga, Fresno	6-20-15	1,169	sd. sh. drig.
Tide Water A. O., No. 1-F, North Coalinga, Fresno	1-19-15	7,378	dry; abd.
Lytle, R. S., No. 37-7-F, East Coalinga, Fresno	7-20-16	5,800	br. sh. drig.
Lytle, R. S., No. 71-18-F, East Coalinga, Fresno	18-20-16	5,654	sd. sh. drig.
Standard Oil, No. 71-13-C Fee, E. Coalinga, Fresno	13-20-15	655	sd. sh. drig.
Standard Oil, No. 1-17-F Fee, E. Coalinga, Fresno	17-20-16	7,191	sd. sh. drig.
Superior Oil, No. 1 Cagle, East Coalinga, Fresno	6-20-16	6,684	br. sh. drig.
Superior Oil, No. 2 Fee, East Coalinga, Fresno	7-20-16	7,187	flow 2,205 b.d.
Jarvis, L. F., No. 2 Fee, West Coalinga, Fresno	14-20-14	187	idle
Dauphin Dev. Co., No. 2 Boone, Alcalde, Fresno	30-21-14	4,510	idle
Stuart Oil, No. 1 Alcalde, Alcalde, Fresno	12-21-14	1,170	idle
Union Oil, No. 4 King, Kettleman North, Fresno	29-21-17	8,520	redrlg. 7,760
K.N.D.A., No. 54-24-H, Kettleman North, Fresno	24-21-16	9,160	sd. sh. drig.
K.N.D.A., No. 6-16-Q, Kettleman North, Kings	16-22-18	6,870	sd. sh. drig.
K.N.D.A., No. 65-20-Q, Kettleman North, Kings	20-22-18	7,651	testing
K.N.D.A., No. 36-22-Q, Kettleman North, Kings	22-22-18	6,880	sd. sh. drig.
K.N.D.A., No. 78-22-Q, Kettleman North, Kings	22-22-18	5,695	br. sh. drig.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	11,030	flow water
Standard Oil, No. 56-1-P, Kettleman North, Kings	1-22-17	5,959	fish D.P.
Standard Oil, No. 76-7-Q, Kettleman North, Kings	7-22-18	5,490	br. sh. drig.
Cal. Pet. Prod. No. 1 Irons, Cuyama, San L. Obispo	19-10-24	1,720	cleaning out
Epco, Inc., No. 1 Ajax, Union, San Luis Obispo	27-26-13	3,430	sd. sh. drig.
Arnold, V. F., No. 1 Yellow King, Ducor, Tulare	9-23-28	198	hd. sd. drig.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Antelope Valley Oil, No. 1 Palmdale, Los Angeles	17 -6-12	1,078	sd. sh. drig.
Mojave Pet., No. 1 Hillside, Gorman, Los Angeles	5- 8-18	477	sd. sh. drig.
Texas Co., No. 1 Anderson, Ocean Park, Los Angeles	17- 2-15	7,285	cleaning out
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,100	cmtd. 5,050
Amron Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,210	idle
Bolling Oil, No. 1 Autry, Torrance, Los Angeles	23- 4-14	4,797	sd. sh. drig.
Cinco Oil, No. 1 Woodruff, Torrance, Los Angeles	23- 4-14	3,600	rigging up
D. & W. Oil, No. 4 Lomita, Torrance, Los Angeles	23- 4-14	5,137	flow 148 b.d.
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigged up
Hart Pet., No. 1 Neher, Torrance, Los Angeles	23- 4-14	4,990	sd. sh. drig.
Kern Pet., No. 1-A Madden, Torrance, Los Angeles	23 -4-14	5,090	flow 420 b.d.
Logan Pet., No. 1 Hadley, Torrance, Los Angeles	23- 4-14	4,560	sd. sh. drig.
Lebow, C. H., No. 1 Fee, Torrance, Los Angeles	23- 4-14	1,587	sd. sh. drig.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	9- 4-14	3,595	rigged up
Pacific West. Oil, No. 11 Marble, Torrance, L. A.	23- 4-14	3,430	cleaning out
Pettijohn, J. F., No. 1 Marilou, Torrance, L. A.	23- 4-14	5,150	sd. sh. drig.
Paso Oil, No. 1 Lyle, Torrance, Los Angeles	22- 4-14	4,951	sd. sh. drig.
Standard Oil, No. 1-1 Marble, Torrance, Los Angeles	15- 4-14	4,986	pump 70 b.d.
Standard Oil, No. 1-2 Marble, Torrance, Los Angeles	15- 4-14	3,828	milling 2,715
Westside Oil, No. 1 Exeter, Torrance, Los Angeles	23- 4-14	3,835	redrlg. 3,550
Wilson, Ray, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,152	flow 318 b.d.
Whit, S. F. S. Synd., No. 1 Lomita, Torrance, L. A.	23- 4-14	1,997	sd. sh. drig.
Woolner Oil, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	5,131	flow 160 b.d.
West Basin Oil, No. 1 Eyster, Torrance, Los Angeles	23- 4-14	3,775	redrlg. 3,590
C. C. M. O., No. 15, Torrance, Los Angeles	14- 4-14	4,979	sd. sh. drig.
C. C. M. O., No. 18, Torrance, Los Angeles	14- 4-14	5,010	cleaning out
D. & B. Oil, No. 3 Lomita, Harbor City, Los Angeles	25- 4-14	1,894	sd. sh. drig.
Gen. Pet., No. 1 Poggi, Harbor City, Los Angeles	25- 4-14	3,836	redrlg. 3,794
Macrate, A. N., No. 2 Kupfer, Harbor City, L. A.	25- 4-14	5,072	sd. sh. drig.
O'Donnell, J. L., No. 44 Oakley, Harbor City, L. A.	30- 4-13	5,218	fish D.P.
Richfield Oil, No. 1 Capitol, Harbor City, L. A.	30- 4-13	5,301	P.D. 5,235
Sunset Oil, No. 2 Security, Harbor City, Los Angeles	25- 4-14	5,265	O.S. drig.
Texas Co., No. 2 Oakley, Harbor City, Los Angeles	30- 4-13	6,109	sd. sh. drig.
Union Oil Co., No. 65 Callender, Dominguez, L. A.	32- 3-13	7,200	sd. sh. drig.
Union Oil, No. 49 Hellman, Dominguez, L. A.	33- 3-13	8,942	sd. sh. drig.
Shell Oil, No. 97 Reyes, Dominguez, Los Angeles	33- 3-13	5,494	sd. sh. drig.
Entrikin, W. E., No. 1-D West, Athens, Los Angeles	7- 3-13	6,520	dry; abd.
Fairfield, F. E., No. 1 Abel, Rosecrans, Los Angeles	19- 3-13	7,689	flow 780 b.d.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

O'Donnell, J. L., No. 46 Mail, Rosecrans, L. A.	19-	3-13	7,725	sd. sh. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles	20-	3-13	7,655	fish D.P.
Barnsdall Oil, No. 10 Rosecrans, Rosecrans, L. A.	20-	3-13	8,747	P.B. 6,508
Union Oil, No. 27 Rosecrans, Rosecrans, L. A.	19-	3-13	7,810	sd. sh. drlg.
Union Oil, No. 29, Rosecrans, Rosecrans, L. A.	19-	3-13	7,760	sd. sh. drlg.
Union Oil, No. 30, Rosecrans, Rosecrans, L. A.	19-	3-13	6,380	sd. sh. drlg.
Universal Cons'd., No. 14 Trust, Rosecrans, L. A.	18-	3-13	6,940	sd. sh. drlg.
Superior Oil, No. 12 Maxwell, Rosecrans, L. A.	19-	3-13	8,852	sd. sh. drlg.
Hydrocarbon Prod., Inc., No. 1 Cole, Rosecrans, L. A.	19-	3-13	7,750	O.S. drlg.
Hydrocarbon Prod., Inc., No. 1 Duchess, Rose., L. A.	20-	3-13	7,050	sd. sh. drlg.
Royalty Ser. Corp., No. 3 Gordon, Rosecrans, L. A.	18-	3-13	6,970	sd. sh. drlg.
West. Gulf Oil, No. 1 Bagg, Rosecrans, L. A.	17-	3-13	8,618	dry; abd.
Basin Oil, No. 3 Club, Potrero, Los Angeles	34-	2-14	3,286	sd. sh. drlg.
Barnsdall Oil, No. 4 R.S.F., Newhall, Los Angeles	26-	4-17	7,352	flow 1,100 b.d.
Mojave Pet., No. 2 Jennings, Newhall, Los Angeles	33-	5-14	430	sd. sh. drlg.
O'Donnell, J. L., No. 1 Hammond, Newhall, L. A.	8-	3-16	4,305	rigged up
General Pet., No. 33 Harbor, Wilmington, L. A.	2-	5-13	2,596	sd. sh. drlg.
General Pet., No. 37 Harbor, Wilmington, L. A.	2-	5-13	2,288	sd. sh. drlg.
General Pet., No. 14 S.P., Wilmington, Los Angeles	2-	5-13	3,654	sd. sh. drlg.
Allied Pet., No. 30 Harbor, Wilmington, Los Angeles	35-	4-13	5,683	P.B. 3,348
Hollywood Oil, No. 5 Baxter, Wilmington, L. A.	33-	4-13	3,712	flow 440 b.d.
Master Pet., No. 1 Chuck, Wilmington, Los Angeles	35-	4-13	5,762	pump 50 b.d.
Union Pacific R. R., No. 94, Wilmington, L. A.	4-	5-13	5,660	P.D. 5,596
Union Pacific R. R., No. 95, Wilmington, L. A.	4-	5-13	2,855	flow 140 b.d.
Union Pacific R. R., No. 96, Wilmington, L. A.	4-	5-13	3,257	sd. sh. drlg.
Union Pacific R. R., No. 97, Wilmington, L. A.	4-	5-13	2,191	sd. sh. drlg.
Union Pacific R. R., No. 98, Wilmington, L. A.	4-	5-13	2,640	sd. sh. drlg.
Grady, R. T., No. 1 Associates, San Pedro, L. A.	23-	5-14	614	idle
Seacliff Pet., No. 1 Club, Montebello, Los Angeles	3-	2-12	715	idle
Olympic Refining, No. 1 Smith, Montebello, L. A.	2-	2-12	5,770	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2-	2-12	6,730	sd. sh. drlg.
St. Helens Pet., No. 30 Monterey, Montebello, L. A.	2-	2-12	2,399	sd. sh. drlg.
Standard Oil, No. 2 Braun, Montebello, Los Angeles	2-	2-12	4,670	sd. sh. drlg.
Standard Oil, No. 4 Braun, Montebello, Los Angeles	2-	2-12	3,368	sd. sh. drlg.
Standard Oil, No. 5 Braun, Montebello, Los Angeles	2-	2-12	3,193	sd. sh. drlg.
Standard Oil, No. 1 McDonald, Montebello, L. A.	2-	2-12	6,245	will deepen
Union Oil, No. 1 Calkins, Montebello, Los Angeles	2-	2-12	6,367	sd. sh. drlg.
Union Oil, No. 4 Howard & Smith, Montebello, L. A.	2-	2-12	5,098	sd. sh. drlg.
Pongratz Oil, No. 1 Newmark, Montebello, L. A.	2-	2-12	1,998	sd. sh. drlg.
McVicar & Rood, No. 3 Manz, Montebello, L. A.	2-	2-12	5,198	sd. sh. drlg.
Mont. Wesco, Inc., No. 1 Mont., Montebello, L. A.	2-	2-12	6,693	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, Los Angeles	2-	2-12	6,705	flow 425 b.d.
H. & C. Oil, No. 1 Joyce, Whittier, Los Angeles	22-	2-11	601	sd. sh. drlg.
Texas Co., No. 6 Baldwin, Santa Fe Springs, L. A.	6-	3-11	6,880	sd. sh. drlg.
Johnston Drlg., No. 36, North Long Beach, L. A.	13-	4-13	4,538	pump 15 b.d.
Massey & Asso., No. 1 Taylor, Long Beach, L. A.	19-	4-12	4,745	rig to pump
Parry & Co., No. 1 Associates, Long Beach, L. A.	19-	4-12	5,630	sd. sh. drlg.
Texas Co., No. 1-13-A Smith, Anaheim, Orange	8-	4-10	2,631	sd. sh. drlg.
Brea Canyon Oil, No. 49 Brea, Brea Canyon, Orange	2-	3-10	3,130	hd. sd. drlg.
Shell Oil, No. 20 Orange, Brea Canyon, Orange	2-	3-10	6,793	sd. sh. drlg.
Battersby, J. M., No. 1 Associates, Carmenita, Orange	21-	3-11	8,965	will P.B.
Graham-Loftus Oil, No. 2 Perkins, E. Coyote, Orange	13-	3-10	3,360	pump 10 b.d.
Goodrich Oil, No. 1 Paige, Richfield, Orange	22-	3- 9	3,114	sd. sh. drlg.
Southwest Expl., No. 4 State, Hunt. Beach, Orange	10-	6-11	4,066	sd. sh. drlg.
Southwest Expl., No. 5 State, Hunt. Beach, Orange	10-	6-11	3,075	sd. sh. drlg.
Shell Oil, No. 1 Irvine, Corona Del Mar, Orange	6-	7- 9	2,990	sd. sh. drlg.
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-		4 806	fish D.P.
Palm City Oil, No. 1 Palm City, San Diego	21-18-		2 181	sd. sh. drlg.
So. Count. Pet., No. 1 Serranos, San Bernardino	22-	2- 8	2,820	sd. sh. drlg.

KANSAS

Week Ending December 31 (Descriptions are East unless marked otherwise)

Barton County

Amerada Pet. Co. No. 1 Kruckenberger, C NE NE Sec. 14-19-15w. Drlg. 2,665 ft.

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. T.D. 3,449 ft.; D.&A.

Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lansing 3,100 ft.; Arb. 3,338 ft.; 2,000 ft. O.I.H.; S.D. for csg.

I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. S.D. 2,250 ft.

Virginia Drlg. Co. No. 1 Clawson, SW NW Sec. 17-20-11w. Lans. 3,054 ft.; Arb. 3,285 ft.; T.D. 3,299 ft.; 3,000 ft. O.I.H.

Butler County

Bowland & McCoy No. 1 Frankson, SE SW Sec. 2-29-6. Drlg. 165 ft.

Higgens & Pierce No. 1-A Shrieves, NE NW SE Sec. 2-26-4. Rng. csg. 830 ft.

Simpson & Estes No. 1 Farm, SE NE NE Sec. 30-27-7. S.O.&G. 2,210-20 ft.

Cowley County

Barnsdall No. 1 Snodgrass, NW SE Sec. 36-30-6. S.D. 1,500 ft.

Ben Gralapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. W.O.C. 2,995 ft. 630 ft.

Dickinson County

Franks et al No. 1 Huffman, NW SW Sec. 11-13-1. Drlg. 1,600 ft.

Ellis County

C. L. Carlock No. 1 Philip, SE SW NE Sec. 10-15-17w. Drlg. 1,895 ft.

Cities Service No. 1 Hall "D," C NW Sec. 2-12-17w. Arb. 3,593 ft.; T.D. 3,603 ft.; P. 114 B.O. in 8 hrs.

Darby Pet. No. 1 Peavey, NW NE Sec. 24-11-18w. T.D. 3,456 ft.; swb. 110 B.O. in 15 hrs.

Graham County

Continental Oil Co. No. 1 Putnam Inv. Co., CWL SW Sec. 3-9-21w. Drlg. 3,050 ft.

Harvey County

Lanahan Drlg. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Duwe & Farris No. 1 Kimminau, NE NW SW Sec. 12-30-9w. R.U.S.T. 4,596 ft.

McPherson County

Marylyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. T.D. 3,018 ft.; swb. 30 B.O. in 12 hrs.

Marion County

Cox & McGinnis and Saco Oil Co. No. 1 Jolliffe, C S½ SW SE Sec. 2-22-5. U.R. 2,457 ft.

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,380 ft.; 300 ft. O. I.H.; no test.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.D. 1,200 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. Drlg. 3,155 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Rice County

Cities Service No. 1 DeWitt, CSL NE Sec. 33-19-9w. Drlg. 2,075 ft.

Cities Service No. 1 Murphy, CWL NE Sec. 9-19-9w. Arb. 3,260 ft.; H.F.W.; D.&A.

Frank Hollow No. 1 Hohl Est., NW NE Sec. 3-18-10w. Drlg. 1,405 ft.

Spurrier & Bruce No. 1 Cary, NE NW NW Sec. 30-18-8w. O.W.D.D.; O.T.D. 1,530 ft.; S.D. 1,680 ft.

J. H. Tatlock No. 1 L. C. Proffitt, SW SE SW Sec. 12-20-10w. Lansing 3,025 ft.; Simpson 3,294 ft.

Rooks County

Phillips Pet. Co. No. 1 Tanzey, C NW SW Sec. 25-8-18w. Arb. 3,418-3,423 ft. T.D. 3,424 ft.; acd. and swb. 21 B.F.

Producers No. 1 Ham (O.W.D.D.), SW NW Sec. 25-7-19w. O.T.D. 1,800 ft. T.D. 3,040 ft.; S.D. for csg.

Russell County

K. F. Nelson No. 1 Polcyn, SW Sec. 31 13-15w. Top pay 3,170-80 ft.

Phi-Han No. 1 Weimeister, SW Sec. 1 14-13w. Top pay 2,655 ft.; perf. and acd. and swb. ½ B.O.P.H.; to P.B.

R. H. Shields No. 1-A Gross, CSL SW SE Sec. 5-15-13w. Drlg. 645 ft.

W. I. Southern No. 1 Sellens, SW cor Sec. 22-15-13w. Arb. 3,352-54 ft.; shot 3,188-96 ft.; acd. and P. 45 B.O. and 70 B.W. in 8 hrs.

Earl Wakefield No. 1 Meharg, SE SE SE Sec. 16-15-13w. Drlg. 2,590 ft.

Yankey & Stearnes No. 1 Krog, NW SE NW Sec. 7-15-13w. Top pay 3,324-27 ft., T.D.; pmp. 25 B.O.P.H.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Drlg. 1,100 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. U.R. 2,356 ft.

Stafford County

Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft.; Arb. 3,638 ft.; R.U.S.T. 3,640 ft.

Virginia Drlg. Co. No. 1 Schlockter-meyer, SE NW Sec. 7-21-11w. W.O.C. 247 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. Misener 3,825 ft.; Wlx. 3,832 ft.; Arb. 3,880 ft.; T.D. 3,890 ft.; D.&A.

Earl Henderson No. 1 King, NE NE NE Sec. 22-31-4. Drlg. 2,100 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 300 ft.

Woodson County

M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

OKLAHOMA

Week Ending December 31

NORTHERN OKLAHOMA

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. T.D. 2,556 ft.; S.D.O.

Cleveland County

Burke-Greis No. 1 Alberts, SE SW NW Sec. 19-7-1w. Drlg. 5,360 ft.

Harper, Turner et al No. 1 Taylor, SE NE NW Sec. 23-8-2w. Drlg. 6,682 ft.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; drlg. up swb.

Coal County

Patsy Oil Co. No. 1 Spence, NW SE SE Sec. 19-2-8. S.S.O. 4,169-74 ft.; drlg. 4,630 ft.

Garfield County

Champlin Ref. Co. No. 1 Allen, SE SE SE Sec. 26-24-8w. Drlg. 2,540 ft.

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; 1st Wlcox 6,658 ft.; dry; 2nd Wlx. 6,690 ft.; F. 219 B.O. and 267 B.W. in 24 hrs.; comp.

Hughes Drlg. Co. No. 1 Meisner, C NE NW Sec. 10-20-4w. Drlg. 3,000 ft.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; cd. 5,964-76 ft.; rec. sh.; cd. 6,351-76 ft.; rec. hd. sd.; drlg. 6,580 ft.

L. W. Wrinkler No. 1 Chapman, SE SE NE Sec. 23-4-6w. S.S.O. 1,400-27 ft.; T.D. 3,000 ft.; abd.

Greer County

S. T. Moore No. 1 Graumann, NE NW NW Sec. 11-5-21w. T.D. 560 ft.; abd.

Hughes County

Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. S.D. 3,098 ft.

Phillips Pet. Co. No. 1 Mandler, SE SW SW Sec. 1-6-10. Viola 5,357 ft.; dolo. 5,435 ft.; dolo. 5,510 ft.; drlg. 5,925 ft.

Jackson County

Lippert No. 1 Howard, NE SW NW Sec. 10-3-19w; O.W.D.D. Drlg. 1,675 ft.

Kay County

Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. T.D. 1,040 ft.; fsg.

C. C. Nye No. 1 Wolfenbarger, SW NW SW Sec. 16-27-4. T.D. 3,201 ft., sd.

Kingfisher County

Burton Pet. Corp. No. 1 Zerger, C SE SW Sec. 5-18-6w. S.D. at 3,510 ft.; lost cones.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Drlg. 3,560 ft.

Kiowa County

Crawford & Zelliff No. 1 Kimray, SW SW NW Sec. 36-5-18w. S.D. 354 ft.

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. S.D. 520 ft.

Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; abd.

Lincoln County

Fields & Nagle No. 1 Black, SE SE SE Sec. 31-16-6; O.W.D.D. Swb. 150 B.O. in 14 hrs. and S.D. at 3,980 ft., T.D.

Muskogee County

Heydrick No. 1 Paschall, NE SE NW Sec. 22-13-19. S.D. 1,446 ft.

Okfuskee County

Mead Prod. Co. No. 1 Pine, SW SW NW Sec. 14-12-11. T.D. 2,848 ft.; rig burned down; rebuilding.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. S.D. 400 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. Drlg. 1,310 ft.

Payne County

Starr O. & G. Co. No. 1 Georgia, SE SW NE Sec. 35-18-4. Drlg. 4,041 ft.

Roy Starr No. 1 McKenzie, SW SW NE Sec. 13-18-3. Viola 4,053 ft.; 1st Wlx. 4,096 ft.; 2d 4,132 ft.; Schlum. showed wtr.; D.&A.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW Sec. 4-2-15. T.D. 1,040 ft.; S.D.

Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. T.D. 1,300 ft.; M.I. rotary.

Pontotoc County

J. L. Casey No. 1 Pace, SW SW NE Sec. 14-2-7. S.D. 1,235 ft.

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. S.D. 4,100 ft.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. 1st Wlx. 4,385 ft.; 2nd 4,460 ft.; T.D. 4,476 ft.; P.B. 4,388 ft.; P. 6 B.O. in 24 hrs.; D.&A.

Wood Oil Co. No. 1 Peters, SW SE NW Sec. 28-8-4. Drlg. 3,955 ft.

Seminole County

Atlantic Ref. Co. No. 1 Atkinson, NW NW SW Sec. 17-6-6. Drlg. 1,775 ft.

Lesslie Rogers No. 1 Kidd, NE SW SE Sec. 33-10-8. T.D. 200 ft.; S.D.

W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. S.D. 400 ft.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. S.D. 100 ft.

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. S.D. wtr. 2,908 ft.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.

Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Rmg. at 8,200 ft.; to run 9-in. csg.; T.D. 10,195 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. Drlg. 2,190 ft.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. T.D. 4,110 ft.; rng. csg.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. sdy. L. 1,300 ft.

Cotton County

Jim Turner No. 5 Collins, C NE NE Sec. 18-4s-10w. S.S.O. 1,237 ft., sd.; T.D.; S.D.

ARKANSAS

Calhoun County

J. E. Murdock No. 1 Southern Craft Corp., SE cor. NW NW Sec. 17-14-13. Top Nac. 2,372 ft.; top Tokio 2,920 ft. S.D. 3,291 ft.; arng. to dpn.

Columbia County

Atlantic Ref. Co. No. 1 Barnette, C SW

SE Sec. 14-17-20. 10¾-in. csg. 2,250 ft.; drlg. 5,000 ft.

Normandie Oil Corp. No. 1 L. Garrett, C NE NE Sec. 23-17-20. 9⅝-in. csg. 2,230 ft.; drlg. 6,700 ft.

Pet. Finance Co. No. 1 Barnett, C NW SE Sec. 14-17-20. T. Bknr. L. 7,378 ft.; T. Smkvr. L. 7,478 ft.; 7-in. csg. 7,527 ft.; comp.; 30 B.P.H.

Pet. Finance Co. No. 1 Garrett, C SW SW Sec. 13-17-20. M.I. rig.

Southwood Oil Co., Inc., No. 1 L. Garrett, C SW SW Sec. 13-17-20. T. Bknr. L. 7,295 ft.; T. Smkvr. L. 7,358 ft.; 7 in. csg. 7,490 ft.; comp.; 30 B.P.H.

Standard Oil Co. of La. No. 3 Crone, SW cor. NE SW Sec. 8-16-22. R.U.

Standard Oil Co. of La. No. 1 Lewis Unit, SE cor. NW NE Sec. 15-17-19. Drlg. hd. chk. 2,423 ft.

Standard Oil Co. of La. No. 1 Minnie Harris, NE cor. NE SW Sec. 15-17-19. Drk.

Tide Water Seaboard No. 1 Beene, C SE NW Sec. 15-18-19. Top Cotton Valley 5,887 ft.; cd. 7,000-08 ft.; rec. 4 ft. sd. &sh.; stain oil; cd. 7,020-32 ft.; rec. 1 ft. wtr. sd. and 6 jts. gr. sd.&sh.; no show; cd. S.O. 7,305-10 ft.; cd. 7,997-8,005 ft.; rd. sd.&sh.; cd. T. por. L. 8,201 ft.; B. por. L. 8,226 ft.; cd. to 8,327 ft. and drld. to 8,332 ft.; set 7-in. csg. 8,291 ft.; perf. 8,212-20 ft. with 50 shots; comp.; 8½ B.P.H.; 44-grav. oil; 13½ hrs.; ⅛-in. ck.; T.P. 1,-550 lbs.; C.P. 1,950 lbs.; 7-in. csg.; perf. 2,212-20 ft.; T.D. 8,332 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; drlg. 600 ft.

Lafayette County

Shell Pet. Corp. & Ohio Oil Co. No. 1 Warren, C SE SE Sec. 13-16-24. 13⅜-in. 194 ft.; 9⅝-in. 2,272 ft.; drlg. 6,-760 ft.

Wadley-Erwin et al No. 1 G. W. Taylor, C NE SW Sec. 15-19-26. 13⅜-in. csg. 447 ft.; S.D. 4,832 ft.; fuel.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. S.D. 1,170 ft. hd. sd.

Harford Oil Corp. No. 1 Pinning, C NE NE SW Sec. 6-13-30. S.D.; W.O. 1,-925 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co., Sec. 21-12-28. S.D. 3,395 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson Townsite, Sec. 18-4n-9w. Set 4½-in. csg. on pkr. 1,540 ft.; S.D. 2,406 ft.

J. W. Eddington No. 1 Anderson. S.D. 900 ft.

Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. D.S. stuck 736 ft.

Miller County—Rodessa

Gerhig Co. No. 2 Watson, SE cor. N SE Sec. 2-20-28. 9⅝-in. csg. 970 ft.; T.D. 6,250 ft.; prep. perf. csg.

Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 29-15-15. R.U.

Lyons & Merritt Oil Co. No. 1 E. B. Mitchell, SE cor. NE SW Sec. 2-20-28. Comp.; 20 B.P.H.; ½-in. ck.

F. W. Martin Drlg. Co. No. 1 Bloomburg State Bnk., C SE NE Sec. 2-20-28. Set 9⅝-in. csg.; 7-in. csg.; T.D. 6,303 ft.

F. W. Martin No. 2-A Watts, 335 ft. E, 330 ft. N, SW cor. SW NE Sec. 2-20-28. Loc.

F. W. Martin Drlg. Co. No. 1-B Watts, C S NW NW Sec. 1-20-28. Drlg. sh. 3,-500 ft.

Mrs. S. O. Thompson No. 1 Gen. Am. Life Ins. Co., SE cor. SE SW Sec. 20-14-26. Cd. 3,657 ft.; slightly por. sdy. L.; D.S. stk.; T.D. 3,825 ft.; D.S.T. 3,-677-95 ft.; tstd. 15 thribbles S.W.; 8 min.; S.D.; W.O.; 3,851 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack, 330 ft. SW cor. NW SW Sec. 2-15n 12e. Top Nac. 2,160 ft.; set 7-in. csg 2,897 ft.; drlg. hd. gr. L. 3,711 ft.

Nevada County

C. D. & F. Pet. Co. No. 1 P. T. Grayson, SW cor. NW SE Sec. 4-14-20. Drlg. 817 ft.

Texas Canadian Oil Co. No. 3 Stocks, C SW NE Sec. 9-15-22. 10-in. csg. 20 ft.; 7-in. csg. 1,341 ft.; T. Nac. 1,183 ft.; ripped csg. 1,204 ft.; bld. S.W.; W.O.C.

Union County—Schuler

E. M. Jones No. 1 J. C. Morgan, SE NW Sec. 13-18-18. Drlg. 100 ft.

E. M. Jones No. 3-B Murphy Ld. Co., SW cor. SE NE Sec. 13-18-18. Drlg. T. Jones sd. 7,508 ft.; T. L. 7,612 ft.; T. Rey. L. 7,635 ft.; T.D. 7,690 ft.; 7-in. 7,681 ft.

Lion Oil Ref. Co. No. 1 Edna, SE cor. NE NE Sec. 18-18-17. Drlg. sh. 5,270 ft.

Lion Oil Ref. Co. No. 6 Marcus, C Lot 3, SW Sec. 18-18-17. Set 16-in. csg. 114 ft.; 10¾-in. csg. 1,950 ft.; drlg. shly. sd. 5,706 ft.

Lion Oil Ref. Co. No. 7 Mayfield, C Lot 2, NW Sec. 18-18-17. Cd. T. L. 7,631 ft.; set 7-in. csg. 7,718 ft.; comp.; 402 B.P.D.; ⅛-in. ck.; T.P. 1,000 lbs.; C.P. 1,100 lbs.; perf. 7,650-55 ft.; T.D. 7,-725 ft.

Lion Oil Ref. Co. No. 3 Sewell, NE cor. Lot 4, NW Sec. 18-18-17. 10¾-in. csg. 1,955 ft.; drlg. sh. 5,485 ft.

Marine Oil Co. No. 3 Calloway, SE cor. S½ Lot 4, NW Sec. 18-18-17. T. L.; cd. 7,635-80 ft.; T. Jones sd. 7,531 ft.; T. D. 7,735 ft.; 7-in. csg. 7,721 ft.; comp.; 793 B.P.D.; ¼-in. ck.; T.P. 1,050 lbs.; C.P. 1,250 lbs.; perf. 7,658-63 ft.

C. H. Murphy et al No. 2 fee, NW cor. SW SE Sec. 13-18-18. Drlg. rd.&gr. sh. 4,932 ft.

Phillips Pet. Co. No. 1 Amanda, SE cor. NE SE Sec. 12-18-18. Drlg. rd.&gr. sh. 6,473 ft.

Phillips Pet. Co. No. 2 Amanda, NE cor. NE SE Sec. 12-18-18. 10¾-in. csg. 2,-068 ft.; drlg. rd.&gr. sh. 5,924 ft.

Phillips Pet. Co. No. 2 Brian, C S½ NE SE Sec. 13-18-18. 10¾-in. 2,077 ft.; drlg. rd.&gr. sh. 6,817 ft.

Phillips Pet. Co. No. 3 Brian, NW SE Sec. 13-18-18. 16-in. csg. 191 ft.; drlg. 7,662 ft.

Phillips Pet. Co. No. 1 Edwards, SW NE Sec. 17-18-17. 7-in. csg. 7,704 ft.; perf. 7,628-35 ft.; would not flow and re-perf. 7,626-35 ft.; T.D. 7,740 ft.; re-perf. 7,624-35 ft.; washed and swbd.; would not flow; S.I.; W.O.; C.P. 400 lbs.; pmpg. 30 B.P.D.; T.D. 7,740 ft.

Phillips Pet. Co. No. 2 El Dorado, NW cor. NW SE Sec. 12-18-18. 10¾-in. csg. 2,104 ft.; drlg. rd.&gr. sh. 6,717 ft.

Phillips Pet. Co. No. 2 Miller, C N¼ Lot 4, SW Sec. 18-18-17. T.D. 7,680 ft.; rng. 7-in. csg.

Phillips Pet. Co. No. 6 Sewell, NE cor. Lot 3, SW Sec. 7-18-18. 10¾-in. 2,071 ft.; drlg. rd.&gr. sh. 6,711 ft.

Phillips Pet. Co. No. 7 Sewell, NE cor. 2,079 ft.; drlg. rd.&gr. sh. 5,992 ft.

Phillips Pet. Co. No. 8 Sewell, SE cor. Lot 4, SW Sec. 7-18-18. Drlg. rd.&gr. sh. 6,641 ft.

Phillips Pet. Co. No. 1 J. E. Stratford, SW cor. NW NW Sec. 17-18-17. 10¾-in. in. csg. 2,073 ft.; drlg. 7,593 ft.

Union County—Other

E. G. Bradham No. 2 Raulston, SE Sec. 12-17-14. S.O. 3,013-25 ft.; 5½-in. csg. 3,052 ft.; comp.; 150 B.P.D.; ⅝-in. ck.; T.P. 240 lbs.; perf. 3,013-19 ft.

Fohs Oil Co. No. 1 Craig, C SE NE Sec. 5-18-14. Top Nac. 2,203 ft.; D.S.T 2½ min.; ⅝-in. cks.; rec. 40 ft. drlg. fluid; set 10¾-in. csg. 2,378 ft.; cd. top Tr. Pk. 3,068 ft.; top Crain sd. 3,158 ft.; T. Bcknr. 6,750 ft.; cd. Smackover L., S.O. 6,849-56 ft.; D.S.T. 6,851-56 ft.; rec. 5,100 ft. fluid, over 50% S.W. and some oil 32-34 grav.; cd. 6,856-73 ft.; rec. 7 ft. 7 in. firm por. sat. oolitic L.; 3 ft. 4 in. fine silty med. por. ool. L., no shows and 2 ft. 4 in. slightly por. oolitic L.; D.&A.

Goodwin & Markwick No. 1 Adams, 250 ft. SW cor. SW NW Sec. 7-17-13. 10-in. 99 ft.; cd. 2,984-3,044 ft.; cg. 3,-042 ft.

Hollyfield & McFarlane No. 6 Scott-Murphy, NW cor. E½ SE NW Sec. 9-16-15. Cd. T. Meakin sd. 2,336 ft., sdy. sh.; S.O. 2,362 ft.; gr. sdy. sh. 2,-362-71 ft.; 7-in. csg. 2,375 ft.; P.B. and W.O.C. 2,356 ft.; W.O.S.R.

J. R. Lockhart No. 1 Jerry, SE SE Sec. 12-17-14. Drlg. 2,179 ft.

Lion Oil Ref. Co. No. 9 Hardy-Murphy, NW cor. NE NW Sec. 9-16-15. Cd. sd. S.O. 2,295-2,321 ft.; 7-in. csg. 2,344 ft.; cor. perf. 2,294-2,300 ft.; W.O.S.R. 2,-349 ft.

J. R. Lockhart No. 1-A Raulston, NE cor. SW SE Sec. 12-17-14. D.S.T. 3,-007-37 ft.; ¼-in. B. and ½-in. T cks.; W.P. 100 lbs.; 3 min.; W.P. 210 lbs.; 9 min.; rec. drlg. mud and cut oil; rng. 7-in. csg. 3,037 ft.; tstd. S.W.; W.O.

Mullins & Brooks et al No. 1 Nash, 500 ft. N and 338 ft. W of SE cor. NW SE Sec. 7-17-13. 10-in. csg. 148 ft.; D.S.T. 3,037-52 ft.; rec. 250 ft. oil and 30 ft. S.W.; 14-min.; W.P. 4 lbs.; top pay 3,232 ft.; 5½-in. 3,100 ft.

Mullins, Brooks et al No. 2 Nash, NE cor. NE SW Sec. 7-17-13. 10-in. 148 ft.

Sloan Wells, Tr., No. 4 G. J. Childs, 150 ft. NW cor. NE SW Sec. 8-16-16. O.W. W.O.; O.T.D. 2,656 ft.; wshg. to bttm. 2,656 ft.

ALABAMA

Barbour County

H. A. Stebbinger et al No. 1 Mrs. Alyce Robertson, C NE NE Sec. 19-10n-25e R.U.

NORTH MISSISSIPPI

Calhoun County

L. C. Lucas No. 1 E. C. Boland, 400 ft. E and 500 ft. S, NW cor. SW Sec. 9-22n-9e. S.D. 791 ft.

S. & O. Properties, Inc., No. 1 G. C. Cooner, SE NE Sec. 12-24n-8e. S.D. 2,300 ft.

Clarke County

Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. S.D. 290 ft.

George County

Cleve Love et al No. 2 J. J. Newman Lbr. Co., C SW Sec. 9-1s-8w. S.D. 7,-038 ft., red beds.

Harrison County

Big Ridge Oil Co. No. 1 Hingin, Sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

G. Jefferys No. 1 Gaddis Farms, Inc., NW cor. SE Sec. 26-7n-4w. S.D. 3,-448 ft.

Cleve Love et al No. 1 S. F. Johnson NE cor. Sec. 29-6n-1w. S.D. 5,218 ft., sd.; arng. D.D.

Montgomery County

Dr. T. H. Chichester No. 1 Mitchell, Sec 36-20n-7e. Drk.

Pontotoc County

Waldrop et al No. 1 Bray, Sec. 17-11s 1e. S.D. 310 ft.

Rankin County

Urban B. Hughes, Tr., No. 1 Love Pet Co., 330 ft. SE cor. NW NE Sec. 1-5n-1e. Set 8⅝-in. csg. 758 ft.; 5½-in. csg 2,348 ft.; no report.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor SW NE Sec. 1-10n-17w. S.D. 710 ft.

Goodwill O. & G. Co. No. 1 Berry, Sec 33-2n-4e. S.D. 2,810 ft.

Yalobusha County

Chas. W. Crader et al No. 1 John Bruce Jane, 990 ft. NE cor. Sec. 24-11s-6w Drlg. 1,297 ft.

FLORIDA

Levy County

Florida Oil Discovery No. 2 Cedar Key Co., Sec. 9-15s-13e. S.D.; W.O.; T.D. 4,092 ft.

Nassau County

St. Mary Oil Corp. No. 1 Hilliard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; S.D.; fsg. for bit.

Lake County

Union O. & R. Co. No. 1 Gulf Explm., sec. 17-24s-25e. S.D. 235 ft.

Suwanee County

J. W. Phillips Oil Explm. Co. No. 1 Shilkett, Sec. 14-4s-14e. Drlg. 150 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gavoso, 660 ft. SW cor. SE Sec. 14-16-10. Drlg. sh.& L. 3,613 ft.

Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec 23-15-10. Set 13⅜-in. csg. 180 ft.; drlg. 1,-818 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. S.D. T.D., sh. 3,197 ft.

Premier Inv. Co. No. 1 McDade, SE SW NE Sec. 28-19-11. T.D. 2,384 ft.; acd. with 1,000 gal.; csg. seat gave away; hole full S.W.; 5½-inch csg., 2,342 ft. pmpg. 5 B.O.P.D. and 25 bbls. S.W.; W.O. 2,432 ft.

J. B. Stovall et al No. 6 Ark. Fuel fee, SE cor. NE SE Sec. 15-19-11. 6-in. csg. 365 ft.; comp.; 10 B.P.D.; pmpg.; T.D. 372 ft.

Caddo Parish

C. L. Ablinger No. 1 Gregory, NE cor. Sec. 3-20-11. 6-in. 960 ft.; W.O.S.R. 971 ft.

C. L. Ablinger No. 2 Gregory, NW cor. NE Sec. 3-20-16. 10-in. 42 ft.; set 6-in. 962 ft.; tstd. est. 500,000 ft. gas; W.O. 966 ft.

R. E. Allison No. 3 Ellerbe, NE cor. Sec. 28-18-14. Loc.

R. E. Allison No. 4 Ellerbee, C NW NE Sec. 34-18-14. Set 9⅝-in. csg. 2,034 ft.; comp.; 8 B.P.H.; ⅛-in. ck.; perf. 5,-553-63 ft.

R. E. Allison No. 5 Ellerbee, C NE NE Sec. 34-18-4. 9⅝-in. csg. 2,032 ft.; set 7-in. csg.; perf. 5,549-62 ft.; swbg. in pits.

R. E. Allison No. 1 Jones & Mabry Unit SE Sec. 21-18-14. 5½-in. cmtd. 5,607 ft.; W.O.C. 5,612 ft.; Schlumbg.; B. M. anhy. 4,598 ft.; B. strng. anhy. 4,696 ft.; por. L. 5,556-67 ft. and 5,570-77 ft. tstd. S.W.; abd.

Carney et al No. 3 Hart, SE NW Sec. 21-21-16. Drlg. 1,776 ft.

W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Set 6-in. csg. 1,945 ft.; T.D. 1,954 ft.; tstd. S.W. 1,954 ft. and P.B. 1,944 ft.; drld. out to 1,954 ft.; tstd. S.W.; W.O. 1,954 ft.

Colonial Corp. No. 1 Thigpen-Herold, 330 ft. S and W, C Sec. 34-22-16. Cg. 4,840 ft.; P.B. and cmtd. 5½-in. 2,630 ft.; O.T.D. 4,865 ft.; flwd. oil and went dead; tbg. plugged; prep. pull tbg. and reset.

Paul Cooper No. 2 Stiles, SW SE Sec 28-21-16. Set 6-in. csg. 1,542 ft.; used 1,500 gal. acd. and tstd. dry; tstd. S.O 1,851 ft.; drlg. to 1,977 ft.; tstd. S.W.; W.O.

R. E. Davidson No. 1 Herold et al, NW cor. SE NW Sec. 10-21-16. 6-in. csg. 1,036 ft.; tstg. 1,048 ft.

J. P. Driscoll et al No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 16-in. csg. 208 ft.; W.O.O.

Eagle Prod. Co. No. 1 Means, SE cor. NE Sec. 9-23-15. Ran Schlmb.; T.D. 6,004 ft.; perf. Hill sec. 5,910-75 ft.

W. C. Feazel et al No. 1 Hughes, 660 ft. SE cor. Sec. 33-18-14. 13⅜-in. 184 ft.; drlg. bl. sh. 4,277 ft.

Claude Ferguson No. 1 Lawhon, NW cor. Sec. 7-20-15. Cmtd. 7-in. 1,367 ft.; tstg.; T.D. 1,580 ft.; comp.; 50 B.P.D.

Claude Ferguson No. 2 Lawhon, NW cor. Sec. 7-20-25. R.U.

H. C. Prod. Co. No. 1 Kinnebrew & Ratcliff, NE cor. Sec. 5-19-16. Drlg. sh. 1,560 ft.

Harry Hanbury No. 1 Lowe, et al, SE cor., SW Sec. 23-18-14. Drlg. sh.&anhy. 4,-425 ft.; T. anhy. 4,072 ft.; T.M. anhy. 4,336 ft.; comp.; 20 B.P.H.; ¾-in. ck.; C.P. 300 lbs.; por. L. 5,552½-56½ ft.

Hurricane Pet. Corp. No. 2 Chandler, C NW SE Sec. 34-18-14. 13⅜-in. csg. 178 ft.; set 9⅝-in. 1,620 ft.; el. 240 ft.; drlg. sh.&anhy. 4,767 ft.

Hurricane Pet. Corp. No. 1 North, NW cor. SE NE Sec. 34-18-14. Drlg. 847 ft.

La. Oil Prod. Co. No. 15-B Muslow, Sec. 4-20-15. Drlg. sh.&sd. 2,003 ft.

C. D. Loe No. 1 Meyer, SE cor. Sec. 33-18-14. Top Pettit 5,592 ft.; T.D. 5,628 ft.; perf. 5,602-25 ft. and tstd. S.W.; P.B. 5,611 ft.; 5½-in. csg. 5,627 ft.; T D. 5,631 ft.; P.B. 5,583 ft.; drld. out to 5,610 and perf. 5,602-05 and tstd. S.W.; perf. 5,553-57 ft.; tstd. csg. and perf. 5,-592-95 ft. Set tbg. with packer 5,600 ft. tstd. S.W. and S.O. 5,592-98 ft. and re-perf. 5,589-92 ft.; set pkr. 5,587 ft. and tstd. S.W. 5,600 ft.; S.O.; S.D.; W.O.; T.D. 5,598 ft.; O.T.D. 5,631 ft.

McDonald & Campbell No. 2 Burton, NW cor. Sec. 7-20-15. 7-in. csg. 1,342 ft.; tstg. 1,583 ft.

Manziel et al No. 3 Muslow, NW SW Sec. 6-20-15. Comp.; 40 B.P.D.; 5½-in. csg. 1,335 ft.; used 1,500 gal. acd.; T.D. 1,-575 ft.

Manziel et al No. 3 Ramsey, NE SE Sec. 32-21-15. Set 5½-in. csg. 1,348 ft.; acd. with 2,000 gal. at 1,590 ft.; W.O.S.R.

J. F. Mitchell No. 1-B Muslow, SE NE Sec. 31-21-15. Comp.; 65 B.P.D.; T.D. 1,578 ft.

Oils, Inc., No. 1 Cazaux, SW cor. Sec. 10-16-13. O.W.W.O.; O.T.D 3,500 ft.; wash to bttm., 3,500 ft.; S.D.

Sam Ripps No. 1 Chew-Lvy, Bd., Sec. 23-21-16. Set 12½-in. csg. 40 ft.

J. E. Sedberry No. 1-A Dickinson, SW cor. Sec. 10-19-14; O.W.W.O. O.T.D. 2,410 ft.; 4½-in. csg. 2,435 ft.; W.O.C. 2,453 ft.

Harry Smith No. 1 Sproull, SE cor. Sec. 32-20-16. 5-in. csg. 1,411 ft.; tstd. S.W. 1,910 ft.; P.B. 1,650 ft. and swbg. S.W. O.T.D. 1,698 ft.; P.B. 1,650 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW Sec. 17-20-15. Pmpd. S.W.; O.T.D. 1,698 ft.; S.D. 2,150 ft.

Tri-State Prod. Corp. No. 1 Stiles, SE cor. NE Sec. 28-21-16. Set csg. 1,850 ft.; no test; D.&A. 1,850 ft.

Waldrip & Williams No. 1 Crystal fee, 440 ft. E, 220 ft. S, NW cor. C SE SW Sec. 24-21-16. 10-in. 98 ft.; tstg. 992 ft.

R. W. Williams No. 1 Ark. Fuel, SE SE Sec. 26-21-16. 5-in. csg. 2,232 ft.; W.O. S.R. 2,258 ft.

R. W. Williams No. 2 Ark. Fuel, NW cor. SE SE Sec. 26-21-16. R.U.

Caldwell Parish

G. W. Ziegen et al No. 15 Cent. La. Lbr. Co., 1,650 ft. S. 330 ft. E. NW cor. Sec. 32-15-2e. 10-in. 41 ft.; W.O.C.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. 3,212 ft.

Claiborne Parish

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Hd. to slightly por. L. 5,294-5,303 ft.; 5½-in. csg. 5,287 ft.; used 6,000 gal. acd.; swbg. to test; tstd. S.S.O. 5,324 ft.; split csg. 2,600 ft.; cmtd. csg.; swbd. dry; set tbg. with pkr.; cannot cmt. off S.W.; 4½-in. csg.; T.D. 5,324 ft.

De Soto Parish

J. S. Alexander No. 1-A Stoll, sec. 5-12-16. Set 7-in. csg. 2,705 ft.; acd. with 3,000 gal. and tstd. est. 2,000,000 ft. gas; 400 lbs.; gas exhausted; 1,000 ft. O.I.H., 2,761 ft.; did not pmp. at 2,-761 ft.; S.D. W.O. 2,853 ft.

J. A. Lanier No. 1 Powell, SE cor. SE NE Sec. 30-12-11. R.U.

Paul Miller No. 2 Jal Drlg. Co., NE Sec. 5-11-11. Set 7-in. csg. 4,038 ft.; perf. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.; O.T.D. 4,205 ft.; perf. csg. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.

Pippett Oil Corp. No. 1 Williams, SE cor. Sec. 31-13-11. Set 7-in. csg. 1,165 ft.; tstd. S.W. 1,410 ft. P.B. 1,335 ft. and acd. 3,000 gal.; tstd. S.W. 1,360 ft.; abd.; T.D. (P.B.) 1,360 ft.

Grant Parish

Long & Porter No. 1 Swope, SE cor. NW SE Sec. 18-9-1e. 10-in. csg. 84 ft.; set 6-in. csg. 1,610 ft.; T.D. 1,625 ft.; W.O.S.R.

C. L. Thompson No. 1 McNeely Est., NE cor. Sec. 10-6-3w. D.&A. 4,518 ft.

La Salle Parish

Pet. Heat & Power Co. No. 3 Richardson, SE cor. Sec. 3-9-1e. 6-in. csg. 1,-515 ft.; W.O.C. 1,520 ft.

G. C. Walsenhaun No. 1 Dean, NW cor. SE Sec. 23-9-1e. 6-in. csg. 1,595 ft.; W.O.C. 1,602 ft.

Madison Parish

Continental Oil Co. No. 3 Singer, C S SW NW Sec. 2-15-11e. 7-in. csg. 610 ft.

Natchitoches Parish

Jack Lent et al No. 1 Whatley, SW cor. Sec. 17-10-10. Drlg. sh. 800 ft.

Red River Parish

N. W. Hunter No. 1 LeLong, NW cor. NW SE Sec. 33-12-10. 10-in. csg. 40 ft.; D.S.T. 1,671-88 ft.; tstd. 575 ft. S. W. 9 min.; cd. S.W. sd. 2,730-40 ft.; T.D. 2,860 ft.; D.&A. 2,868 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec 20-13-10. 5⅝-in. csg. 2,510 ft.; D.D. 2,560 ft.; W.O.S.R.

H. B. Schumacher No. 1 Crichton, SW cor. NW Sec. 18-13-10. R.U.

Sabine Parish

Clyde Creighton No. 1 Bowman Hicks, C NE NW Sec. 3-7-12. 10-in. csg. 60 ft. drlg. 1,910 ft.

Earl F. Fox No. 1 Cook Ld. Co., SW cor. SE NW Sec. 1-9-12; O.W.W.O. O.T.D. 3,655 ft.; arng. dpn. 3,655 ft.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; cond. mud 3,642 ft.; arng. set 7-in. 3,500 ft.; T.D. 3,642 ft.

LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Tstd. dry 2,130 ft.; tstd. S.G.; acd. with 1,000 gal.; tstd. dry 2,340 ft.; did not acd.; tstd. S.W.; S.O. 2,340 ft.; 500 ft. O.I.H.; used 3,000 gal. acd.; tstd. S.O. 2,340 ft.; will set short string 4-in. csg. 2,340 ft.; W.O.S.R.; 800 ft. O.I.H.

Major Oil Co. No. 1-C Bowman Hicks Lbr. Co., C SW NW Sec. 34-8-12. Tstd. dry and S.D.; 2,817 ft.; W.O.

Major Oil Co. No. 6 Bowman Hicks, C SW SE Sec. 11-7-13. Set 10-in. 82 ft.; set 7-in. csg. 2,196 ft.; T.D. 2,504 ft.; used 2,500 gal. acd.; used 3,250 gal. acd.; tstg.

Major Oil Co. No. 2 Sabine, NW cor. NW NE Sec. 12-7-13. 7-in. csg. 2,134 ft.

Morris Co. No. 1-A Ervine & Bishop, C NE SW Sec. 14-7-13. Set 6-in. csg. 2,177 ft.; used 3,000 gal. acd.; tstd. S.O.; W.O. 2,573 ft.; W.O.S.R.

H. L. Nutting No. 1 Williams, SW cor. Sec. 13-7-11. T.D. 3,130 ft.; used 3,000 gal. acd.; swbg. S.W. 2,860 ft.; will P. B. 2,755 ft.; O.T.D. 3,130 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft. P.B. 2,585 ft.; tstd. dry S.D.; W.O. 2,585 ft.

Shiar & Neighbors No. 1 Martinez, Sec. 11-7-13. 6-in. csg. 2,172 ft.; used 3,000 gal. acd.; tstd. S.O. 2,312 ft.; top sd. 2,552 ft.; tstd. S.O. and S.W. 2,554 ft.; P.B. 2,210 ft.; tstd. dry; D.&A.

M. S. Slagle et al No. 1 Chadwick, SW cor. SE NW Sec. 32-8-10. Set 6-in. csg. 2,590 ft.; swbg. S.W.; T.D. 2,649 ft.; rep. rig; tstd. S.W.; W.O.

C. H. Smith No. 1 Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Set 10-in. csg. 66 ft.

Swolle Synd. No. 1 Mansfield Lbr. Co., Sec. 8-7-19. T.D. 4,323 ft.; 5-in. csg. 3,830 ft.; drlg. plug 4,323 ft.; 2,500 gal. acd.; perf. 3,730-70 ft.; tstd. dry; W.O. 3,770 ft.; O.T.D. 4,323 ft.; sqzd. off perf.; set short string 4-in. csg. 3,883 ft. and perf. 3,861-70 ft. and 3,880-83 ft.; O.T.D. 4,323 ft.; tstd. S.W.; S.O.; P.B. 3,700 ft. and perf. 2,120-40 ft. and 2,234-60 ft.; tstd. small S.G. 2,275 ft. and used 2,500 gal. acd.; tstd. dry; W. O. 2,275 ft.

Tensas Parish

H. V. Schumacker No. 4 Mound Plantation, Sec. 29-11-12e. Rmg. to bttm.; T. D. 2,450 ft.; S.D. for D.S.T. 2,450 ft.

Webster Parish

R. L. Fisher et al No. 1 S. P. D. Coyle, 660 ft. N and 1,880 ft. E of SW cor. Sec. 23-21-10. R.U.

Hunt Oil Co. No. 10 Babb, SE cor. Sec. 14-21-10. Holl. sd. 5,602-17 ft.; comp.; 30 B.P.H.; 22/64-in. ck.; C.P. 1,400 lbs.; T.P. 650 lbs.

Hunt Oil Co. No. 4 Bodcaw-Stewart, 2,155 ft. N and 660 ft. E, SW cor. Sec. 34-21-10. Drlg. anhy.&sh. 4,612 ft.

Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Hollw. sd. 5,595-5,603 ft.; set 9⅝-in. csg.; did not test Hollwy. sd.; top Bodcaw sd. 8,187 ft.; T. Davis sd. 8,457 ft.; 7-in. csg. 8,707 ft.; perf. csg. 8,205-25 ft.; T.D. 8,708 ft.; comp.; 225 bbls. dist.; 24 hrs.; ¼-in. ck.; 3,084,000 ft. gas; T.P. 3,000 lbs.; C.P. 2,650 lbs.

Hunt Oil Co. No. 10 Davis, C SE SE Sec. 13-21-10. Hollwy. sd. 5,674-78 ft. and 5,719-27 ft.; 9⅝-in. csg. 5,660 ft.; tstd. small S.O. 6,038 ft.; Bod. sd. 8,288-8,333 ft.; rng. 7-in. csg.; T.D. 8,392 ft.; comp.; 420 B.P.D. dist.; 21/64-in. ck.; 5,500,000 cu. ft. gas; C.&T.P. 3,000 lbs.; perf. 8,310-25 ft.

Hunt Oil Co. No. 23 Hope, C NW NW Sec. 13-21-10. 9⅝-in. csg.; W.O.C.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Hollwy. sd.; top "D" sd. 8,534 ft.; S.O. 8,534-50 ft.; "D" sd. 8,537-68 ft.; Bodcaw sd. 8,628-68 ft.; set 7-in. csg. 8,715 ft.; perf. csg. 8,540-65 ft. and tstd. S.W.; will sqz. and retest; T.D. 8,600 ft.; O.T.D. 8,720 ft.; P. B. 8,558 ft. and cmt.; did not hold; perf. 8,533-38 ft. and tstd. S.W.; S.O.; T.D. 8,558 ft.; drlg. out cmt. to 8,538 ft.; perf. 8,529-31 ft.; swb. fluid down 2,000 ft.; perf. 8,531-36 ft.; swb. fluid down 7,000 ft.; perf. 8,536-38 ft.; tstd. dry on perf. 8,536-38 ft.; reperf. 8,538-40 ft. and blg. to test 8,558 ft.

Hunt Oil Co. and Stanolind O. & G. Co. No. 1 Coffee-Webster Inv. Co. Unit, C NE NW Sec. 36-31-10. 13⅜-in. csg. 677 ft.; drlg. anhy.&sh. 4,552 ft.

Magnolia Pet. Co. No. 4 Branton, NE cor. Sec. 6-22-9. 9⅝-in. csg. 5,933 ft.; drlg. 7,677 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝-in. csg. 5,920 ft.; top lower Marine 7,998 ft.; 3,505-10 ft. strks. hd. sd., O. &G. odor; cd. 8,537-39 ft.; 2-ft. sd. gas odor; drlg. to 10,070 ft.; ran elec. form. tester; shot with 100 qts. nitro in basal; G. Rose 5,930-36 ft.; swbg.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W. C SE Sec. 29-23-9. Set 13⅜-in. csg. 887 ft.; drlg. 5,128 ft.

North American Oil Consol. Co. No. 4 Stewart-Coyle, C NW SE Sec. 29-21-10. Drlg. shly. sd. 7,559 ft.

Ohio Oil Co. No. 5 Bodcaw, Acct. 5, Sec. 13-21-10. No Holloway sd.; 9⅝-in. csg. 5,640 ft.; Bod. sd. 8,584-8,619 ft.; comp.; 190 B.P.D. dist. and 3,500,000 cu. ft. gas; T.P. 250 lbs.; C.P. 1,000 lbs.

Ohio Oil Co. No. 51 Bodcaw Acct. 2, NE cor. Sec. 15-21-10. 7-in. csg. 8,583 ft.; drlg. 8,619 ft.

Ohio Oil Co. No. 3 B. Sydney Hrs., SW cor. Sec. 16-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,670 ft.; drlg. sdy. sh. 8,590 ft.

Oliphant Oil Corp. No. 1 Gray & Stephens, C SE SW Sec. 35-21-10. Top Tr. Pk. 5,882 ft.; Hollwy. sd. 5,975-88 ft.; 9⅝-in. csg. 5,595 ft.; drlg. 7,800 ft.

Oliphant Oil Corp. No. 1-A Hodges, C NW NE Sec. 3-20-10. Drlg. 6,017 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. No Hollwy. sd.; 9⅝-in. csg. 5,615 ft.; top "D" sd. 8,594 ft., S.W.; T. Bodcaw 8,684 ft.; 7-in. csg. 8,672 ft.; tstd. S.O.&G. and S.W. 8,692 ft.; drlg. 8,721 ft.

Stanolind O. & G. Co. and W. Delaney No. 1 Pardee-Coffee Unit, C NE Sec. 36-21-10. T. Tr. Pk. 5,932 ft.; no Holloway sd.; set 9⅝-in. csg. 5,955 ft.; drlg. sh.&sd. 6,969 ft.

Stanolind O. & G. Co. and Hunt Oil Co. No. 1 Pardee-Coffee Unit, C NE NE Sec. 36-21-10. Top Tr. Pk. 5,897 ft.; no Hollwy.; 9⅝-in. csg. 5,944 ft.; T. Bod. sd. 8,586 ft.; Bod. sd. 8,580-8,626 ft.; 7-in. csg. 8,612 ft.; W.O.C.; T.D. 8,626 ft.

Stanolind O. & G. Co. No. 1 Webster Inv. Co., C NE NE Sec. 35-21-10. 13⅜-in. csg. 737 ft.; no Hollwy. sd.; top Tr. Pk. 5,680 ft.; 9⅝-in. csg. 5,997 ft.; T. "D" sd. 8,172 ft.; T. Bodw. sd. 8,263 ft.; 7-in. csg.; T.D. 8,316 ft.; comp. 518 B.P.D.; 7/32-in. ck.; T.P. 2,100 lbs.; C.P. 2,500 lbs.; T.D. 8,316 ft.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S. C SE Sec. 30-18-8. 13⅜-in. csg. 1,413 ft.; drlg. rd. sh. 6,223 ft.

Woodley Pet. Co. No. 1 J. O. Couch, C NW SW Sec. 36-21-10. Drlg. sdy. sh. 7,501 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drlg.

Bancroft—Beauregard Parish

Geo. E. Lilly et al No. 1 W. K. Rice, Sec. 15-6s-13w. T. gas sd. 7,185 ft.; T. oil sd. 7,326 ft.; T.D. 7,338 ft.; 7-in. csg. 7,326 ft.; I.P. 650 B.P.D.; ¼-in. ck.

Republic Prod. Co. No. 2 Columbia Ld. & Timbr. Co., Sec. 16-6s-13w. T.D. 3,400 ft.; P.B.; sdtrkd.; T.D. 7,360 ft.; 7-in. csg. 7,352 ft. (cor.); sdtrkd.; T.D. 7,343 ft.; oil sd., top sd. 7,283 ft.; I.P. 313 B.P.D.; 7/32-in. ck.

Republic Prod. Co. No. 3 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. Drlg. sh. 4,639 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. Driving piling.

Texas Co. No. 1 Wax Bayou, Sec. 21-16s-12e. T.D. 11,185 ft.; 7⅝-in. csg. 11,126 ft.; P.B. 10,925 ft.; perf. csg. 10,907-20 ft.; tstd. oil and S.W.; set retainer at 10,895 ft.; perf. csg. 10,907-12 ft.; rec. 6,615 ft. of oil and S.W.; P.B. 10,810 ft.; perf. csg. 10,115-35 ft.; tstd. gas on D.S.T.; perf. csg. 10,067-75 ft.; tstd. 1,600 lbs. W.P.; 1,828 ft. of gas-cut mud; sqzd. off perf.; reperf. csg. 9,745-55 ft.; recvd. S.W.

Baton Rouge—East Baton Rouge Parish

Wm. Helis et al No. 4 Duplantier, Sec. 65-7s-1w. Drlg. sh. 4,544 ft.

Wm. Helis No. 2 Harry Nolson, Sec. 36-7s-1w. Top sd. 6,459 ft.; T.D. 6,480 ft.; 7-in. csg. 6,460 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 3 Schwing Lbr. Co., Sec. 66-9s-11e. Drlg. sh. 3,938 ft.

Bayou Bouillon—St. Mary Parish

Transcontinental Oil Co. No. 5 State, Sec. 13-9s-9e. T.D. 1,275 ft.; 10¾-in. csg. 1,170 ft.; no report.

Bayou Choctaw—West Baton Rouge

La. Crusader No. 4 Schwing, Sec. 29-8s-11e. Drlg. sh. 8,484 ft.

La. Crusader No. 5 Schwing, Sec. 29-8s-11e. 9⅝-in. csg. 2,250 ft.; T.D. 4,755 ft.; P.B. 4,200 ft.; sdtrkd. 4,214 ft.; drlg. sh.&L. 7,228 ft.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 3 St. Charles Ld. Co., Sec. 13-15s-20e. Dredge canal.

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 2 L.L.&E., Bay St. Elaine, Sec. 18-22s-18e. Loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Drlg. sh. 5,231 ft.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; drlg. sh.&L. 5,770 ft. no report.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 4 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. Driving piling.

Sun Oil Co. No. 4 Dibert Stark and Brown Cypress Co., Sec. 70-15s-15e. Drlg. sh. 124 ft.

Charenton—St. Mary Parish

Edwards & Aber No. 2 Blanchard, Sec. 21-13s-9e. T.D. 1,148 ft.; 5⅛-in. csg. 1,141 ft.; tstd. S.W.; P.B. 1,132 ft.; perf. csg. 1,125-32 ft.; W.O.S.R.

Edwards & Aber No. 1 Lebland, Sec. 21-13s-9e. Top sd. 1,119 ft.; T.D. 1,123 ft.; W.O.S.R.

Kinsley Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 3-B H. E. Cuer, Sec. 25-13s-9e. T.D. 2,446 ft.; 7-in. csg. 2,437 ft.; no report.

Pan American Prod. Co. No. 1 Law Realty, Sec. 31-13s-10e. Drk.

St. Mary Oil Co. No. 1 Robichaux, Sec. 21-13s-9e. T.D. 1,830 ft.; 7-in. csg. 1,830 ft.; perf. csg. 1,800-05 ft. and 1,795-1,800 ft.; tstd. S.W.; sqzd. off perf. perf. csg. 1,797-1,802 ft.; made sqz. job; no report.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16. 13⅜-in. csg. 1,492 ft.; cg. sh.&L. 5,780 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Landry, Sec. 34-10s-2e. Drlg. sdy. sh. 4,900 ft.

Kiva Oil Co. No. 1 Duplessis, sec. 09-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 22 State, Sec. 5-22s-16e. 13⅜-in. csg. 2,030 ft.; T.D. 6,027 ft.; P.B.; sdtrkd.; drlg. sh.&L. 6,422 ft.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. T.D. 2,862 ft.; 7-in. csg. 2,804 ft.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Drlg. sh. 9,434 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 2 Rek, Sec. 40-17s-15e. Drlg. sd. 8,470 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 30 State, Sec. 38-23s-33e. T.D. 6,943 ft.; sdtrkd.; T.D. 6,885 ft.; 7-in. csg. 6,885 ft.; I.P. 519 B.P.D.; 7/32-in. ck.

Gillis—Calcasieu Parish

Union Sulphur Co. No. 12 State, Sec. 12-9s-8w. Drlg. sh. 8,556 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 1 State-QQ, Sec. 6 20s-19e. 13⅜-in. csg. 1,498 ft.; shaly sd. S.O. 6,083-86 ft.; rec. 1,830 ft. mud &S.W.; D.S.T. 6,582-6,612 ft.; drlg. sh 7,112 ft.; D.S.T. 6,662-77 ft.; rec. 270 ft. oil; cd. oil sd. 7,145-46 ft.; T.D. 7,147 ft.; top sd. 7,137 ft.; 9⅝-in. csg. 7,135 ft.; drld. out to 7,147 ft.; set retainer at 7,123 ft.; sqzd. with cmt.; W.O.C.

Hackberry—Cameron Parish

L. W. Capps et al No. 1 Duhon, Sec. 27-12s-10w. T.D. 3,487 ft.; 7-in. csg. 3,271 ft.; W.O.S.R.

Stanolind O. & G. Co. No. 22-B Gulf fee, Sec. 14-12s-10w. Drlg. sh.&L. 6,721 ft.

Stanolind O. & G. Co. No. 56 State, Kelso Bayou, Sec. 22-12s-10w. Drk.

Superior Oil Co. No. 5 Benson Vincent, Sec. 30-12s-10w. Drlg. sh. 3,326 ft.

Texas Co. No. 16-B State-Hackberry, Twp. 12s-9w. Drlg. sh. 6,510 ft.

Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft., 7-in. csg. 8,050 ft.; perf. csg. 7,903-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf csg. 7,763-74 ft.; W.O.S.R.

Union Sulphur Co. No. 7 Caldwell et al, Sec. 37-12s-10w. Drlg. sh. 7,005 ft.

Union Sulphur Co. No. 11 Doiron, Sec 37-12s-10w. Drlg. sh. 5,792 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e T.D. 11,644 ft.; 9⅝-in. csg. 11,631 ft.; drlg. sh. 12,750 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Adeline Sugar Co Sec. 39-13s-9e. Drlg. sh. 4,310 ft.; no report.

Herton Oil Co. No. 9 Carter, Sec. 38 13s-9e. No report.

Jefferson Island—Iberia Parish

Texas Co. No. 2 Jefferson Island, Sec 58-12-5e. 18⅝-in. csg. 40 ft.; drlg. L.& sh. 4,079 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,732 ft.; trying to drill by fish; P.B 6,104 ft.; W.O.C.; sdtrkd. 6,020 ft.; drlg. sh. 6,212 ft.

A. W. Forrester No. 1 Jules Clement, Sec. 46-9s-2w. T.D. 3,060 ft.; fsg.

Glassell & Glassell No. 4 McFarlain, Sec. 41-9s-2w. Drlg. sh. 6,430 ft.

Glassell & Glassell No. 7 Trushel, Sec. 42-9s-2w. Drlg. sh. 6,739 ft.

Guaranty Oil Co. No. 2 Houssere-Latrielle, Sec. 47-9s-2w. T.D. 1,840 ft.; W. O.S.R.

Gulf Ref. Co. No. 1 Lamb, Sec. 45-9s-2w. Drlg. sh. 6,145 ft.

Jolly Pet. Co. No. 2 Crusel, Sec. 41-9s-2w. 16-in. 84 ft.; drlg. sdy. L. 5,630 ft.

Jolly Pet. Co. No. 3 McFarlain, Sec. 41-9s-2w. Drlg. sh. 5,730 ft.

L. & L. Oil Co. No. 4 Houssiere Latreille, Sec. 47-9s-2w. T.D. 1,825 ft.; 7-in. csg. 1,817 ft.; T.D. 1,881 ft.; pmpd. dry; S.D.

Ladak Oil Co. No. 8 Jenning Clement, Sec. 46-9s-2w. T.D. 1,735 ft.; 6-in. csg. 1,705 ft.; tstd. S.W.; pull screen; dpnd. to 1,764 ft.; swbd. dry.

O'Mera et al No. 2 McFarlain, Sec. 41-9s-2w. T.D. 1,625 ft.; 10¾-in. csg. 1,628 ft.; drlg. sd. 7,059 ft.

Port City Oil Co. No. 23 Jennings Haywood, Sec. 41-9s-2w. R.U.

Shell Pet. Corp. No. 5 Community, Sec. 40-9s-2w. Cg. sh. 7,625 ft.

Stanolind O. & G. Co. No. 113 Crowley & Mineral Co., Sec. 48-9s-2w. T.D. 6,503 ft. 8⅝-in. csg. 1,556 ft.

Superior Oil Co. No. 16 Wm. Leckelt, Sec. 42-9s-2w. Spd.

Three Sands Oil Co. No. 2 Clement, Sec. 46-9s-2w. 6-in. csg. 1,700 ft.; S.D. 2,600 ft.

Lafitte—Jefferson Parish

Texas Co. No. 4 Madison Realty Co., 17s-24e. Cg. sd.; oil odor 9,881 ft.

Texas Co. No. 1 Sch. Bd., Sec. 16-17s-24e. 13⅜-in. csg. 2,030 ft.; T.D. 10,580 ft.; run electrical survey.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp.-Humble O. & R. Co. No. 9 La Fourche Basin, Sec. 2-18s-25e. Driving piling.

Lake Pelto—Terrebonne Parish

Texas Co. No. 22 State, Sec. 8-23s-18e. T.D. 6,027 ft.; sdtrkd.; drlg. sh. 6,212 ft.

Leesville—La Fourche Parish

Texas Co. No. 7 Leeville, sec. 27-21s-22e. T.D. 8,667 ft.; D.S. stk.; sdtrkd.; T.D. 8,436 ft.; sdtrkd.; T.D. 8,685 ft.; stk. 9⅝-in. csg. at 8,577 ft.; sdtrkd. 8,440 ft.; stk. D.S.; sdtrkd.; drlg. sh. 9,015 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Laterre, Inc., Sec. 31-19s-19e. 13⅜-in. csg. 3,174 ft.; drlg. sdy. sh. 11,026 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 7 State-Lake Long, Twp. 17s-19e. T.D. 295 ft.; 18⅝-in. csg. 295 ft.; drlg. sh. 5,687 ft.

New Iberia—Iberia Parish

H. Fotiades No. 7 Gulf Ld., Sec. 25-12s-7e. Drk.

Wm. Helis No. 5 Schwing, Sec. 56-12s-7e. T.D. 4,954 ft.; P.B. 4,188 ft.; W. O.C.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 1 Gonsoulin, Sec. 13-12s-7e. T. salt 9,200 ft.; T.D. 9,210 ft.; P. B. 1,219 ft.

Texas Co. No. 1 Renaudet et al, Sec. 71-12s-7e. Drlg. sh. 2,141 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 5 H. T. Habetz, Sec. 45-8s-1e. R.U.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 2 Klumpp, Sec. 12-7s-2w. Cd. gas sd. 7,943-63 ft.; T.D. 8,655 ft.; 7-in. csg. 8,654 ft.; P.B. 8,511 ft.; perf. csg. 8,478-8,504 ft.; I.P. 158 bbls. dist. per day; 7/32-in. ck.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nezal. Drk.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 37 Orleans Lv. Bd., Sec. 23-18s-15e. T.D. 3,138 ft.; rng. 13⅜-in. csg. 3,061 ft.; drlg. sh. 6,405 ft.

Western Gulf Prod. Co. No. 1 Pascale, Sec. 6-18s-27e. Loc.

Western Gulf Prod. Co. No. 1-A Treadway, Sec. 6-18s-27e. Loc.; (cor.).

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 2-A Orleans Levee Bd., Sec. 7-19s-17e. Loc.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, Sec. 17-19s-17e 9⅝-in. csg. 5,880 ft.; T.D. 8,178 ft.; tstd. 25 lbs. press.; D.S.T. 8,140-78 ft.

Gulf Oil Ref. Co. No. 7 State, Sec. 18-19s-17e. Drlg. sh. 5,993 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; T.A.

Amerada Pet. Corp. et al No. 2 Godchaux, Sec. 34-15s-19e. Dredge canal.

Sorrento—Ascension Parish

Sorrento Pet. Corp. No. 2 White, Sec. 22-10s-4e. 10⅝-in. csg. 1,940 ft.; cg. sh. 6,939 ft.

South Roanoke—Jeff Davis Parish

Union Sulphur Co. No. 2 T. R. S. Farms, Sec. 23-10s-4w. T.D. 10,954 ft.; (cor.). sdtrk. 9,075 ft.; drilled to 9,266 ft.; stuck

D.S.; P.B. 8,860 ft.; sdtrkd.; drlg. sd. 10,134 ft.

Gueydan—Acadia Parish

A. M. Barbe No. 1 G. L. Humble, Sec. 27-11s-1w. Drlg. sh. 4,530 ft.
Burton-Sutton Oil Co. No. 1 Valerean-Simon, Sec. 37-11s-1w. Drlg. sh. 8,210 ft.; no report.

Sweet Lake—Cameron Parish

Pure Oil Co. No. 1 Stanolind O. & G. Co. fee lse., Sec. 12-13s-8w. Drk.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 3 State (O.W.D.D.), Sec. 36-23s-21e. O.T.D. 8,728 ft.; P.B.; sdtrkd.; T.D. 6,795 ft.; 7-in. csg. 6,758 ft.; O.S. 6,792-95 ft.
Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; tsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft., salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. 3,504 lbs. press.; reset screen; would not flow; reset screen; bailed dry; P.B. 5,345 ft.; perf. csg. 5,330-40 ft swbd. dry; flwd. 10 bbls. P.L.O. by heads in 24 hrs.; tstg.

Valentine—La Fourche Parish

Wm. Heiis et al No. 4 Valentine Sugars Inc., Sec. 2-17s-20e. T.D. 7,567 ft.; P.B. 6,765 ft.; drld. out to 6,790 ft.; tstd. oil and S.W. 6,726-95 ft.; P.B. 4,750 ft. sdtrkd. 4,550 ft.; drlg. sh. 6,387 ft.
Pan American Prod. Co. No. 2-A Community, Sec. 58-17s-20e. T.D. 9,629 ft.; tried to blowout; P.B. 7,983 ft.; to sdtrk.
Pan American Prod. Co. No. 2 Robichaux, Sec. 4-17s-20e. Drlg. sh.&shlls. 5,831 ft.
John Vacerro et al No. 1 Acosta Hrs., Sec. 9-17s-20e. Drlg. sh. 3,527 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 9 Manhattan Land & Fruit Co., Sec. 26-21s-30e. 10¾-in. csg. 2,457 ft.; drlg. sd. 5,012 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 3 Piere McDaniel, Sec. 44-3s-2e. Spd.
Continental Oil Co. No. 2 Martha Haas, Sec. 44-3s-2e. Drlg. sh. 5,627 ft.
Continental Oil Co. No. 2 N. H. Hirsch, Sec. 44-3s-2e. Drlg. sh. 7,336 ft.
Continental Oil Co. No. 2 Petre, Sec. 44-3s-2e. R.U.
Texas Co. No. 2 fee, Sec. 27-3s-2e. Drlg. sh. 6,730 ft.

Vinton—Calcasieu Parish

J. M. Donald et al No. 1 Gordon, Benchenstein-Flynn, Sec. 34-10s-12w. T.D. 1,000 ft.; W.O.C.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Adam Comier, Sec. 5-12s-2w. Drlg. sh. 6,250 ft.

West Lake Verret—St. Martin Parish

Shell Pet. Corp. No. 2 Jeanerette, Sec. 14-14s-12e. Clearing loc.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Races, Sec. 12-9s-6w. T.D. 8,911 ft. (cor.); P.B. 8,908 ft.; flwg. oil and S.W.; tstg.
Union Sulphur Co. No. 1 A. H. Thomas, Sec. 12-9s-6w. Drlg. sh. 7,697 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Tennark, Inc., No. 1 C. J. Freeland, Sec. 64-7s-2e. Drlg. sh. 1,915 ft.
Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farewell Co., Inc., Sec. 79-14s-14e. 13⅜-in. csg. 2,978 ft.; drlg. sd.&sh. 7,048 ft.

Avoyelles Parish

Sid Richardson No. 1 Haas Inv. Co., Sec. 7-28s-3e. Drlg. sh. 7,448 ft.

Calcasieu Parish

Humble O. & R. Co. No. 1 S. A. Knapp, Sec. 20-10s-8w. T.D. 8,004 ft.; abd.
David B. MacDaniel No. 2 Sch. Ld., Sec 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in. csg. 1,299 ft.; drlg. sh. 4,750 ft.

Cameron Parish

Federal Royalty Co. No. 2 State-Calcasieu Lake, Twp. 13s-9w. T.D. 1,492 ft.; run 7-in. csg.
Humble O. & R. Co. No. 1 Sweet Lake Ld. & Oil Co., Sec. 6-12s-6w. R.U.
Superior Oil Co. No. 1 John Pradia, Sec. 4-15s-8w (core test). Drlg. sh. 20 ft.

Iberville Parish

California Co. No. 1 Schwing Lbr. Co., Sec. 96-10s-10e. M.I.M.
Humble O. & R. Co. No. 1-B A. Wilberts Sons Lbr. Co., Sec. 78-8s-8e. Dredge canal.
Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e. Clearing loc.

La Fourche Parish

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. Drlg. sdy. sh. 2,441 ft.
Texas Co. No. 1 La Terre, Sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,896 ft.; T.D. 11,136 ft.; 3,500 ft. 6⅝-in. csg. 11,135 ft.; perf. csg. 9,975-10,005 ft.; tstd. 21 stnds. dist.; P.B. 8,600 ft.; drlg. out cmt. to 9,316 ft.; perf. csg. 9,265-90 ft.; tstd. S.W.; made sqz. job; reperf. csg. 9,230-57 ft.; make D.S.T.; perf csg. 8,850-70 ft.; rec. 71 stands of S.W. and 3 stands of mud and oil; sqzd. perf.; W.O.C.; perf. csg. 8,500-20 ft.; I.P. 828 bbls. 37.4-grav. oil per day; ¼-in. ck.; started showing S.W.; killed; tstg. 8,495-8,510 ft.
Texas Co. No. 1 State-Catfish Lake, Sec. 77-19s-21e. 18⅝-in. csg. 90 ft.; drlg. L. 7,338 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. Cd. 10,184-10,214 ft.; formation had small amt. of oil and slight gas show; drlg. sdy. L. rk. 10,216 ft.
W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. Dredge canal.
W. T. Burton No. 2 L.&N.R.R., Sec. 1-12s-14e. Dredge canal.
W. T. Burton No. 1-B R. E. de Montluzin, Sec. 1-10s-13e. Drk.
W. T. Burton No. 1 State-Lake Pontchartrain, Twp: 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,165 ft.; 9⅝-in. csg. 8,165 ft.; T.D. 8,241 ft.; tstd. S.W.; D.S.T. 8,135-8,241 ft.; drlg. sh.&L. 10,332 ft.

Plaquemines Parish

Texas Co. No. 1 L.L.&E. Bastian Bay, Sec. 43-20s-28e. Drlg. sdy. sh. 2,030 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4 State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; drlg. sdy. sh. 8,279 ft.
Wm. Heiis et al No. 1 Mereaux Munez, Sec. 34-12s-12e. Drlg. sh. 6,259 ft.
Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 59-13s-14e. Drlg. sh. 4,718 ft.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. Drlg. sdy. sh. 3,450 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec. 38-12s-15e. Cg. sd. 7,156 ft.

St. Martin Parish

Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. T.D. 9,858 ft.; 7⅝-in. csg. 9,839 ft.; top salt 10,388 ft.; T.D. 10,403 ft.; P.B. 9,775 ft.; perf. csg. 9,763-74 ft.; 8-min. D.S.T. tstd. 2,300 lbs. W.P.; recvd. 10 gal. dist.; sqzd. off perf.; W.O.C.
Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D. 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,175 ft.; drld. out to bttm.; P.B. 8,080 ft.; perf. csg. 8,060-70 ft.; tstd. mud, gas and S.W.; sqzd. off perf.; perf. csg. 8,060-65 ft.; tested 38 stands oil and gas showing fresh wtr.; set screen and lnr.; washed well; no flow; pmpg. well at intervals to lower fluid; lowering tbg. to 5,000 ft.

St. Mary Parish

St. Mary Oil Co. No. 2 L. Herbert, Sec. 31-13s-9e. T.D. 6,952 ft.; stk. D.S.; P. B. 6,764 ft.; sdtrkd.; T.D. 3,110 ft.; abd.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, sec. 33-7s-15e. Drk.

Terrebonne Parish

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; T.D. 10,039 ft.; P.B. 9,852 ft.; sdtrk. 9,984 ft.; T.D. 10,075 ft.; 9⅝-in. csg. 10,061 ft.; drlg. sh. 11,708 ft.
Texas Co. No. 2 State-Coon Point, Twp 23s-14e. 13⅜-in. csg. 1,900 ft.; T.D. 2,851 ft.; S.D. for repairs.
Harrison & Abercrombie No. 1 R. D McDonald, C. Breen Sur. T.D. 10,243 ft.; comp.; no ga.
Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. Cg. sd.&sh. 10,096 ft.

West Columbia—Brazoria County

Mike Hogg No. 5 fee, M. Varner Sur. T.D. 6,215 ft.; P.B. to make D.S.T.
Texas Co. No. 10 Phillips, G. Tennille Sur. Drlg. sh. 5,237 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas et al No. 4-118 State, T.D. 5,983 ft., oil sd.; tstg.
Standard Oil Co. of Texas No. 35-118 State. Driving piling.

Seabreeze—Chambers County

Sun Oil Co. No. 5 Acom. H.T.&B. Sur. No. 103. 10¾-in. csg. 1,945 ft.; drlg. sh. 6,312 ft.
Sun Oil Co. No. 3-A White, H.T.&B. Sur. No. 118. 10¾-in. csg. 1,910 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 6 Silvas S. Burney Sur. T.D. 6,598 ft.; 5-in. csg. 6,591 ft.
Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay) 10¾-in. csg. 1,212 ft.; T.D. 8,530 ft.; 5½-in. csg. 6,673 ft.; perf. csg. 6,637-41 ft.; tstd. S.W.; P.B. 4,500 ft.; W.O.C.

League City—Galveston County

George Echols No. 1 Maco Stewart, Perry & Austin Sur. Drlg. sh. 8,736 ft.
Gulfboard Oil Corp. et al No. 1 Ross-Stewart, Perry & Austin Sur. Bldg. rd.
Phillips Pet. Co. No. 1 Dr. Patton, S. F. Austin Sur. Cg. sdy. sh. 8,897 ft.
Phillips Pet. Co. No. 1 Stewart, Title Guaranty, S. F. Austin Sur. Drlg. sh. 5,336 ft.
West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No 1 C. Ehrkardt, H. Simmons Sur. 9⅝-in. csg. 1,010 ft.; drlg. 1,230 ft.

Clear Lake—Harris County

Stanolind O. & G. Co. No. 1 Geo. Sowden, Jas. Lindsey Sur. Drlg. sh. 1,500 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.

Eureka—Harris County

Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Means & McGehee No. 1-E Lackner, H. Reinerman Sur. Spd.
Tide Water Asso. Oil Co. No. 1 M. A. Roy, J. Reinerman Sur. T.D. 8,650 ft.; perf. csg. 7,945-49 ft.; tstg.

Fairbanks—Harris County

E. M. Hailey No. 1 Albert Brown, J Clarkson Sur. Loc.
Housh-Thompson No. 1 Yerkes, Sam Lewis Sur. T.D. 6,835 ft.; run csg.
Sinclair Prairie Oil Co. No. 2 Goodykoontz, Wiley S. Powell Sur. T.D. 6,975 ft.; perf. csg. 6,832-35½ ft.; tstg.

Friendswood—Harris County

Humble O. & R. Co. No. 7 Herman Hospital, T. Choate Sur. Drlg. sh. 4,020 ft.
Humble O. & R. Co. No. 1 Johnson, Perry & Austin Sur. Drlg. sh. 2,516 ft.
Humble O. & R. Co. No. 1 J. L. Jones Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 9 Keisling & Dixon, T. Choate Sur. Drlg. sh.&bldrs. 1,010 ft.
Humble O. & R. Co. No. 1 Messimer, T. Choate Sur. Drlg. sh. 4,412 ft.
Humble O. & R. Co. No. 3 Settegast, T Choate Sur. Drk.
Humble O. & R. Co. No. 1 E. E. Watson Drk.
Humble O. & R. Co. No. 4 West Prod. Co., T. Choate Sur. Drlg. sh. 1,139 ft.

Cheek—Jefferson County

Humble O. & R. Co. No. 1 E. K. Fallor, C. Hillebrandt Sur. R.U.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 1 McFaddin, S. A. Pace Sur. Drlg. sh. 1,900 ft.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B Blackman Lge. T.D. 8,675 ft.; 7-in csg. 8,605 ft.; pmpg. wtr. into hole to kill press. in No. 3 Broussard; made sqz. job; dpnd. 8.680 ft.; fsg. for D.P milling out of csg. 8,466-70 ft.; T.D 8,795 ft.; D.S. stk.; sdtrkd.; drlg. 8,573 ft.

Hardin—Liberty County

Atlantic Ref. Co. No. 3-B Johnston-Finley, H. B. Johnston Sur. T.D. 7,650 ft.; 7-in. csg. 7,650 ft.
Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.
Humble O. & R. Co. No. 10-A Partlow, H. B. Johnston. Drlg. sh. 1,825 ft.
Shell Pet. Corp. No. 1-B West, A. B. Hardin Sur. Cg. 7,596 ft.
Smith & McDannald No. 3 Rives, A. B. Hardin Sur. Drlg. sh. 7,255 ft.
Texas Co. No. 1 Humphrey, F. Hardin Sur. Drlg. sh. 3,010 ft.
Woodley Pet. Co. No. 2 Humphrey, F. Hardin Sur. Drlg. sh. 7,340 ft.

Orange—Orange County

Continental Oil Co. No. 18 Chesson, Wm. Dyson Sur. Loc.
Gulf Oil Corp. No. 4 Granger, Wm. Dyson Sur. Drlg. sh. 5,910 ft.
John G. Mayo No. 1 Scales, Wm. Dyson Sur. 10¾-in. csg. 1,000 ft.; T.D. 6,179 ft.; sanded up; reset lnr.; S.D.
Red Bank Oil Co. No. 1 First Natl. Bank, Wm. Dyson Sur. Perf. csg. 5,625-29 ft.; flwd. gas and dist.; tstg.

Ace—Polk County

Peyton Bros. No. 3-B Kirby West, G. S. Thomas Sur. Drlg. sh. 2,490 ft.

Segno—Polk County

Gulf Oil Corp. No. 2-B Quin, A. Morales Sur. Drlg. sh. 1,536 ft.
Gulf Oil Corp. No. 5 Ragan, L&G.N. Sur. No. 15. Loc.
Gulf Oil Corp. No. 15 Wing, L&G.N. Sur. No. 13. Drlg. sh. 5,312 ft.
Humble O. & R. Co. No. 10-B Kirby Lbr. Co., M. Victor Sur. Drlg. sh. 7,369 ft.
Providence Oil Co. No. 2 Wing, L&G.N. Sur. No. 14. Drlg. 2,117 ft.

Spurger—Tyler County

Republic Prod. Co. No. 16 fee, N. Hurd Sur. R.U.
Republic Prod. Co. No. 14 Hurd, N Hurd Sur. T.D. 7,690 ft., oil sd.; tstg.

GULF COAST WILDCATS

Austin County

Crown Cent. Pet. Corp. et al No. 1 Huebner, Renkestolz Sur. R.U.
Kirby Pet. Co. No. 1 Herring, H.&T.C. Sur. No. 102. Drlg. sh. 102 ft.

Brazos County

N. W. Hunter No. 1 Jerichew, E. M. Millican Sur. T.D. 4,526 ft.; abd.

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.
Gray, Wolfe and Mayo No. 1 Joe D. Hughes, F. B. Drake Sur. T.D. 6,250 ft.; abd.
Humble O. & R. Co. No. 1 Masterson, Geo. Robinson Sur. 13¾-inch csg. 2,402 ft.; drlg. sd. 9,771 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.
Moore & Ahern No. 1 E. Maley, Ben Winfree Sur. Drlg. sh. 6,064 ft.
L. D. Roberts No. 1 C. H. Lang, T.&N. O. Sur. No. 35. Spd.

Colorado County

Coyle & Concord No. 4-B Powell, I.&G. N. Sur. No. 45. Drlg. sh. 1,050 ft.

Fort Bend County

Kennelly & Hendee et al No. 1 W. T. Boyd, Wm. Barrett & A. Harris Sur. Drk.

Harris County

Jack Frazier et al No. 1 W. T. Carter, Talcott Patching Sur. T.D. 4,717 ft.; fsg.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jefferson County

British American Oil Co. et al No. 2 Gladys City, J. A. Veatch Sur., SW flank Spindletop dome. Drlg. sh. 6,339 ft.
I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 13-B McFaddin-State, Sec. 8. 10¾-in. csg. 2,758 ft.; drlg. sh. 5,735 ft.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.
Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. Drlg. sh. 2,510 ft.

Montgomery County

Housh & Thompson No. 1 E. B. Clary, Wm. S. Allen Sur. T.D. 4,739 ft.; 7-in. csg. 4,736 ft.; flwg. dry gas, volume test through ¾-in. ck. 3,420,000 ft.
H. A. Pennington et al No. 1 F. L. Banker, L. M. H. Washington Sur. S.D. 1,033 ft.
J. Smith et al No. 1 J. V. Scott, F. A. B. Wheeler Sur. Drlg. 3,630 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. T.D. 7,867 ft.; P.B.; sdtrkd.; 7-in. csg. 9,402 ft.; T.D. 9,705 ft.; D.S. stk.; P.B. 8,384 ft.; to sdtrk.

Waller County

Providence Oil Corp. No. 1 Ida Lee Muske, Jas. Perry Sur. R.U.

S. W. TEXAS WILDCATS

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. T.D. 1,722 ft.; perf. csg. 1,650-75 ft.; perf. csg. 1,654-76 ft.; flwd. fresh wtr.; S.S.O.; S.D.

Bastrop County

Ira Brown No. 1 T. W. Bailey, John Crutchfield Sur. No. 12. T.D. 3,312 ft.; abd.
R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 2,150 ft.
Marts & Beaven No. 1 Doherty, John Maxmillian Sur. Drlg. chk. 2,546 ft.

TEXAS

Week Ending December 31

GULF COAST FIELDS

Hastings Field—Brazoria County

Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.
Stanolind O. & G. Co. No. 12 South Tex. Grain Co., Perry & Austin Sur. Drlg. sh. 1,530 ft.

Old Ocean—Brazoria County

Commerce Oil Co. No. 1 S. M. Patterson, Polly & Chance Sur. 9⅝-in. csg. 7,000 ft.; drlg. 9,867 ft.
Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. S.D. 8,878 ft.
Harris & Abercrombie No. 4 Armstrong, Polly & Chance Sur. Cg. sdy. sh. 10,137 ft.
Harrison & Abercrombie No. 3 Chenault, C. Breen Sur. Drlg. sh.&L. 8,730 ft.
Harrison & Abercrombie No. 1 Lois Buck, Polley & Chance Sur. Drk.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,160 ft.

Bexar County

H. G. Krumm No. 1 Kempf, Samuel Mc. Collough, Jr., Sur. No. 54. Drlg. 467 ft.
L. G. Priest et al No. 1 E. B. McCollough, Stephen Jett Sur. T.D. 1,004 ft.; will test on pmp.
Charles Schreiner No. 1 McCloskey, L. Desague Sur. No. 134. T.D. 1,100 ft.; S.D.
David Stiles No. 1 Minna Sherrer, Jos Antonio de la Garza Sur. Drlg. 620 ft.
Joe Wagner et al No. 1 Florence Lamm, Manuel De Luna Sur. No. 3. Spd.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; S.D. 501 ft.
E. L. Nixon No. 2 Crist, John McClenechen Sur. No. 94. S.D. 210 ft.

Brooks County

Humble O. & R. Co. No. 1 McGill Bros., Ygnacios Rivas, La Blanca gr. T.D. 4,728 ft.; I.P. 218 B.P.D.; ⅞-in. ck.
Humble O. & R. Co. No. 2 McGill Bros., Ygnacios Rivas La Blanca gr. Drlg. 1,806 ft.

Caldwell County

S. T. Dudley et al No. 1 Becker, L. L. Joseph Sur. T.D. 713 ft., chk.; 7-in. csg. 685 ft.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. T.D. 10,015 ft.; P.B. 8,550 ft.; perf. csg. 7,829-50 ft.; tstg.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

Frank Gravis No. 3 Schallert, Seale, Morris & Seale Sur. No. 2550. Drlg. 1,207 ft.
Magnolia Pet. Co. No. 1 Duval Co. Rch. Co., G.C.&S.F.R.R. Sur. No. 189. Tstd. S.W. in Cole sd.; T.D. 2,274 ft.; abd.
S.K.&C. et al No. 3 Weider, Nathaniel Tinsley Sur. Drlg. sh. 1,408 ft.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6. G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Hickock & Reynolds No. 1 San Antonio Joint Stock Ld. Bnk. T.D. 301 ft.; W. O.C.
Humble O. & R. Co. No. 2 Houston, Conrad Die Sur. 161. Drlg. chk. 4,637 ft.

Goliad County

J. D. Brock et al No. 1 Dial, Pedro Trevino Sur. S.D. 5,010 ft.
Steinberge Pet. Corp. No. 1 Albrecht T. Hancock Sur. T.D. 5,313 ft.; 5½-in. csg. 5,313 ft.; perf. csg. 5,238-44 ft.; pulling tbg.; cmt. job gave way.

Gonzales County

Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 500 ft.
John Hueners et al No. 1 Bauer, R. E. Brown Sur. S.D. 1,017 ft.
A. L. Mitchell and L. W. Sorrell No. 1 A. I. Culpepper. R.U.

Guadalupe County

J. E. Clark No. 3 Anderson, Green Dewitt Sur. S.D. 1,812 ft.
Frank Glenn No. 1 Appling, Harriet Cottle Sur. No. 14. T.D. 2,218 ft.; tstg. 2,-130-37 ft.
Joseph Holefield No. 1 Claud Brodnax, John King Sur. Spudded and S.D.
A. D. King No. 1-A Rosenbrock, Vincente Duran Sur. No. 4. T.D. 1,982 ft.; Buda L.; 6-in. csg. 991 ft.; swbg. and flwg. 3 B.O.P.H.; started showing S.W.; cmtd. off bttm. of hole; swbg.; showing small amt. of oil.
E. H. Robertson No. 1 Alex Forshage, Eligio Gortari Sur. No. 16. Drlg. limestone 2,190 ft.; no report.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. T.D. 1,483 ft. (cor.); 4½-in. csg. 1,468 ft.; fsg.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car. Hidalgo Co. Canal Subd., Lot 8. Blk 8. T.D. 7,509 ft.; perf. csg. 7,440-65 ft.; tstd. 500,000 ft. gas, 9 bbls. dist.; W.P. 1,700 lbs.; killed well; reperf. csg. 6,918-30 ft.; tstd. dist.; reperf. csg. 6,515-25 ft.; flwd. dist.; S.I.

Jim Hogg County

Humble O. & R. Co. No. 4 Bass, San Rafel Flores. T.D. 4,803 ft.; abd.
Humble O. & R. Co. No. 5 Bass, San Raphael gr. Drlg. 3,689 ft.
Johnson & Robinson No. 1 Palacios Mary Montgomery Sur. T.D. 5,005 ft.
Navarro Oil Co. No. 1 Guerra, Santa Teresa gr. (7,000 ft. SW discovery Kelsey field). 10¾-in. csg. 1,231 ft.; cg. 4,820 ft.

Jim Wells County

Ark. Fuel Oil Co. No. 1 Blinka, M. Marerra gr. Drlg. sh. 4,336 ft.
Tom Graham et al No. 1 Chas. Hirsch, Jacob Stanfert Sur. T.D. 5,776 ft.; 5½-in. csg. 4,689 ft.; perf. csg. 4,628-33 ft.; flwg. gas and dist.
Magnolia Pet. Co. No. 1 Samuel Maun, Los Olmos y Loma Blanca gr. Tstd. gas 6,071-83 ft.; cg. ahead.
W. H. Mathews No. 1 Frances Clark, Los Precenos gr. R.U.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,332 ft.; 7-in. csg. 7,332 ft.; perf. csg. 7,327-30 ft.; T.D. 7,832 ft.; fsg.

Karnes County

M. W. Brown et al No. 1 Yanta, S. G. Hardaway Sur. S.D. 2,778 ft.
Formax Oil Co. No. 1 Pflugger, Erasmus Seguin Sur. S.D. 1,969 ft.
Suttle et al No 1 McKinney, Luz Navarette Sur. S.D. 900 ft.

Kendall County

Carpenter No. 1 Seidensticker, A. Rodriquez Sur. No. 257. S.D. 518 ft.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. T.D. 985 ft.; fsg.

Kerr County

J. O. Hart et al No. 5-E Jeff Love, J Martinez Sur. O.W.D.D. T.D. 5,677 ft.; S.D.

Kimble County

Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. S.D. 1,863 ft.
Plateau Oil Co. No. 1 Hunger J. Duiner Sur. 5½-in. csg. 1,765 ft.; S.D. 2,080 ft.

Kinney County

Bob Rose No. 2 Gaebler, Dolores Soto de Beales gr. S.D. 225 ft.
C. B. Wardlaw No. 1 Standart, Meliton Valdez gr. T.D. 1,402 ft.; tstg.

La Salle County

Lake-Tobian Oil Co. No. 1 O'Connor ranch, Blk 35. Bland & Nelson subd. T.D. 4,221 ft.; abd.

Lavaca County

A. C. McCord et al No. 1 Cora Russek, Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). Drlg. clay 250 ft.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. T.D. 6,404 ft.; acd.; no results; S.D.

Live Oak County

R. H. Feltner No. 1 Reed, I.&G.N. R.R Sur. 15. R.U.

McMullen County

Edward Wilkins No. 1 D. W. Rhodes, B. S.&F. Sur. No. 27. Drlg. 1,200 ft.; no report.
Loma Oil Co. No. 1 Edrington A. B. & M Sur. No. 79. T.D. 1,823 ft.; run csg.
Scarborough & Bigiane No. 1 Matula Emmitt, Jas. Garner Sur. No. 6. T.D. 880 ft.; C.O.

Maverick County

Wellington Oil Co. of Delaware and Humble O. & R. Co. No. 2 Indio Cattle Co. Antonio Rivas Grant. Cuevas Pasture No. 2. Drlg. 2,239 ft.

Medina County

Victor Ziegler No. 1 Paul Haby, Wm. G Still Sur. No. 1. S.D. 875 ft.

Milam County

McGuyer and McCormick No. 1 Jacob. Jose Leal Sur. Drlg. sh. 200 ft.; no report.

Nueces County

O. W. Killam No. 1 N. O. Chapman, Laureles Farm tr., Sec. 22. T.D. 7,205 ft.; abd.
Renwar Oil Co. et al No. 1 Eschberger Nueces River Irrig. Park subd. Drlg. sh. 6,137 ft.
Seaboard Oil Co. No. 2 Wilson, Jose Vincente Lopez de Herrera Sur., Blk. 9. Drlg. sh. 2,400 ft.
Union Prod. Co. No. 1 Minnie Brow (Agua Dulce area). Drlg. sh. 13,600 ft.

Real County

Blakely Smith et al No. 1 Love Ranch. H.E.&W.T.R.R. Co. Sur. Drlg. 495 ft. no report.

Refugio County

G. S. I. et al No. 6 Rooke, Aldrete 6¼ Lge. Perf. csg. 6,355 ft.; tstg.
Hewitt & Dougherty No. 2 Rooke, Aldrette 6¼ Lge. Cd. sd. 6,312-29 ft.; tstg.
Phillips Pet. Co. et al No. 1 Emilie Pavleck, Aldrete 6¼ Lge. Drlg. sh. 5,-339 ft.
Rutherford Oil Corp. No. 1 Neiman, Estaban Lopez Sur. T.D. 6,505 ft.; 5½-in. csg. 5,300 ft.; perf. csg. 5,235-47 ft.; I.P. 3,250,000 cu. ft. gas; some dist. per day; ¼-in. ck.

Starr County

Rhinehart and Bowman No. 1 Bowman, J. C. McCarty Sur. Loc.
Sun Oil Co. No. 3 McKinney, A. J. Smith Sur. No. 242. Cg. sd. 5,027 ft.
Sun Oil Co. No. 1 N. R. Montalvo, Los Retachez gr., Juan Jose Sais Sur. No 347. T.D. 5,017 ft.; rmg.
Transwestern Oil Co. No. 1 Dallas Jt Stk. Ld. Bnk., Gavino Silvas Sur. 9¾ in. csg. 1,439 ft.; T.D. 6,081 ft.; abd.

Victoria County

H. L. Edwards No. 1 Strobe, J. M. Cobarrubias Sur. Drlg. sh. 1,567 ft.

Webb County

Harvey & Henderson No. 2 Benavides, J. Poitevent Sur. No. 459. Drlg. sh. 2,736 ft.
Houser and Campbell No. 2 Puig, Edrington subd. of Aberca De Arriba gr. T.D. 2,322 ft.; abd.
Richardson Pet. Co. No. 1 A. M. Bruni, H.&G.N.R.R. Sur. No. 17. Loc.

Williamson County

L. B. Burnette, Jr., Tr., No. 1 D. C. Reed, E. Leichtle Sur. S.D. 930 ft.
H. H. Coffield and Taylor Ref. Co. No. 2 Caller, H.T.&B. Sur. No. 7. T.D. 1,-493 ft.; abd.

Zapata County

Joe Martinez No. 1 F. Zaragosa, J. V Borego gr. T.D. 1,340 ft.; abd.

EAST TEXAS

(Border Counties)

Harrison County

F. H. Barnwell No. 1 Smith, A. P. Hope Sur. Cg. 2,830 ft.; D.S.T. 2,280 ft. tstd. dry; ran 5-in. csg. 2,300 ft.
W. S. King No. 1 Taylor, Martin Sur. R.U.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 E. Crawford. A. D. S. Coy Sur. Drlg. L.&sh. 4,718 ft.
Ark.-La. Gas Co. No. 1 Moseley, Alex Johnson Sur. D.S.T. 5,969-93 ft.; tstd. 20,000,000 ft. gas in 6 min.; used 3,-000 gal. acd.; well cleaning; est. 10,-000,000 to 12,000,000 ft. gas; 5½-in. csg. 6,056 ft.; comp.; 20,000,000 cu. ft. gas; R.P. 2,450 lbs.; perf. 5,974-89 ft.; T.D. 6,160 ft.
Cable Tool Drlg. Co. No. 1 Howard, John Hanks Sur. Set 5½-in. csg. 6,058 ft.; T.D. 6,084 ft.; used 2,000 gal. acd.; tstg.
Cable Tool Drlg. Co. No. 1 Schellinger John Hanks Sur. 5½-in. csg. 6,053 ft.; W.O.C.; T.D. 6,096 ft.; comp.; 204 B.P. D.; ¼-in. ck.; T.P. 100 lbs.; C.P. 450 lbs.
G. Scott Hammond No. 1 W. S. Ford, C. Grayson Sur. 9⅝-in. csg. 1,262 ft.; csg. seat would not hold; skd. 24 ft. east and drlg. 2,732 ft. in 2nd hole.
Harry Hanbury No. 1 Davis, W. R. Meyer Sur. Cg. 5,777 ft., for Gloyd form.
Phillips Pet. Co. No. 2 Henderson, T. Gillespie Sur. Set 7-in. csg. 6,073 ft.; W.O.C. 6,090 ft.
Shell Pet. Corp. No. 1 Stephenson, G. Perry Sur. 8⅝-in. csg. 1,013 ft.; 5-in. csg. 5,991 ft.; perf. 5,973-80 ft.; comp.; no ga.
Shell Pet. Corp. No. 2 Whelan, Thos. Gillespie Sur. Drlg. sh.&L. 5,754 ft.

Marion County—Other

Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. T.D. 2,394 ft.; swbd. dry; shot with 2 qts. nitro at 2,334 ft.; tstd. dry; S.D. 2,394 ft.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. S.D. 5,885 ft.; flows ½ to 3 bbls. 41-grav. oil and goes dead; C.P. 500 lbs.; will attempt to comp. as gas well.

San Augustine County

Superior Oil Co. et al No. 1 Long Bell Lbr. Co., S.P.R.R. Sur. 10¾-in. csg. 440 ft.; T.D. 5,000 ft.; D.S. stk.; fsg.

Shelby County

Redditt & Gray No. 1 Pickering Lbr. Co., Childers Sur. Set 7-in. 5,080 ft.; T.D. 5,139 ft.; making est. 100,000,000 ft. gas with 55-grav. brown dist.; C.I.C.P. 2,500 lbs.; C.I.T.P. 2,300 lbs.; flwg. 3 B.P.H. crude and 7,000,000 ft. gas.

WEST TEXAS WILDCATS

Andrews County

Anderson & Prichard-Osage Drlg. No. 1 Univ., Sec. 13, Blk. 14, Univ. Sur. Tstg. 4,281 ft.
Atlantic and Standard No. 1-B Cowden, Sec. 1, Blk. 14, T.&P. Sur. Loc.
Rogers & Rogers No. 1-B University, Sec. 20, Blk. 9, Univ. Sur. Drlg. 4,-334 ft.
Honolulu Oil Corp. No. 1-18 J. E. Parker. Sec. 18, Blk. A-44, P.S.L. Sur. W.O.C. 4,400 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown. 5 mi. W of S end of Fuhrman pool. S.D.O. 4,981 ft.
J. W. Tripplehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. Tstg. 5 to 10 B.O.P.D.; 4,468 ft.
H. C. Wheeler, No. 1 White-Shelton. Sec. 18, Blk. 36-A, P.S.L. Sur. D.&A. 4,731 ft.
Wright & McMillen No. 1 Bryant-Link, Sec. 7, Blk. 48, P.S.L. Sur. Loc.

Cochran County

T. G. Shaw No. 1 Carrie S. Dean, Lge. 94. Bldg. drk.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 39, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Magnolia Pet. Co. No. 12 W. P. Edwards, Sec. 12, Blk. 23-B, P.S.L. Sur. R.U.S.T.
Magnolia Pet. Co. No. 1-18 University, Sec. 18, Blk. 30, Univ. Sur. R.U.S.T.
Standard O. of Texas No. 1-4 University Sec. 4, Blk. 30, Univ. Sur. Drlg. 1,-212 ft.

Crockett County

Humble No. 1 Ozona-Barnhart, Sec. 4, Blk. M-N, G.S.&F. Sur.

Culberson County

Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex. Oil No. 1 J. E. Neely, Sec. 28. Blk. 35, T.&P. Sur. R.U.S.T. 2,063 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D. 3,508 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur.; 6,000-ft. test. Drlg. 3,333 ft.

Ector County

Harry J. Brown No. 1 J. M. Gist, Sec. 9, Blk. 42, T.&P. Sur. Drlg. 2,011 ft.
Fields et al No. 1 Owenwood, Sec. 6, Blk. 44, T.&P. Sur. D.&A. 4,501 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. S.D. 3,-571 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Flwd. 148 B.O. in 9 hrs.; P.B. depth of 7,400 ft.; tstg. 7,352 ft.

Glasscock County

Crusader Pet., Inc., No. 1 A. D. Neal, Sec. 20, Blk. 33, T.&P. Sur.; 3,200-ft. test. D.&A. 2,720 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. Drlg. 5,348 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. W.O.C. 5,365 ft.

Jeff Davis Parish

H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. Drlg. 620 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,-450 ft.

Mitchell County

Ajax Drlg. Co. No. 1 Schustes, Sec. 25, Blk. 17, S.P.R.R. Sur. Drlg. 2,150 ft.

Pecos County

G. T. Abell et al No. 1 Baldwin Est., Sec. 24, Blk. 9, H.&G.N. Sur. Drlg. 1,940 ft.
J. R. Bell No. 1-C Gulf-Shearer, Sec. 11, Blk. 10, H.&G.N. Sur. Fsg. bit 1,-513 ft.
Childress Royalty No. 1 Humble-Shearer, Sec. 103, Blk. 10, H.&G.N. Sur. Spdg.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.C. Sur.; 2,500-ft. test. Rng. 7-in. 1,941 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. S.D.O. 260 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. Drlg. 982 ft.
S. Thompson No. 1 Elsinore Cattle Co. Sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. by pipe 6,965 ft.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31, Blk. 58, P.S.L. Sur. Drlg. 149 ft.
Ohio Oil Co. No. 1 Papham, Sec. 18, Blk. 54, T.&P. Sur. Drlg. 5,970 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 935 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. W.O.C. 550 ft.

Scurry County

Coffield & Guthrie No. 1 First Natl., Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. M.I.M.
Coffield & Guthrie No. 1 E. E. Spears et al, Sec. 130, Blk. 97, H.&T.C. Sur. Tstg. 2,366 ft.; P.B. depth.
Forest Dev. Co. No. 1 J. J. Koonsman, Sec. 217, Blk. 2, H.&T.C. Sur. Drlg. 2,700 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch Sur. W.O.C.; cave 4,948 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. U.R. 715 ft.

Ward County

Edwards & Donnelly No. 1 J. S. Reynolds, Sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 1,145 ft.
Joint E. Mitchell No. 1 Allen, Sec. 7, Blk. 32, H.&T.C. Sur. P.B. 2,155 ft.; S.D.O.

Winkler County

J. W. Richardson No. 1-A J. M. Broshara, Sec. 22, Blk. 77, P.S.L. Sur. P.B. 3,329 ft.; C.O.; flwd. est. 70 B.O. P.D.

Yoakum County

Shell Pet. Corp. No. 1 C. A. Hudson, Sec. 834. Bldg. drk.
Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743. Flwd. 2 B.P.H., 2% oil; tstg. on pmp. 5,256 ft.; made 160 B.P.D.

TEXAS PANHANDLE

Collingsworth County

C. H. Mee and C. F. Anderson No. 1 V. K. McCaskill, Sec. 18, Blk. 16, H.&G. N. Sur. Loc.
Tinsley, White & Knoll No. 1 Frank

Knoll, Sec. 62, Blk. 16, H.&G.N. Sur. C.O. 2,263 ft.
White No. 1 Wischamper, Drlg. 1,500 ft.
Johnson No. 1 Taylor. S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. S.D. 5,650 ft.

Donley County

Robinson No. 1 Kuteman. Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 3,985 ft.

Gray County

English No. 1 Eudy. S.D. 3,977 ft.
Tripplehorn No. 2 Webb, Sec. 12, Blk. A-9, H.&G.N. Sur. R.U.S.T.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 1,880 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.&F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Drlg. 5,850 ft.

Roberts County

Whitlock No. 1 Cunningham. S.D. 2,817 ft.

E. C. TEXAS WILDCATS

Angelina County

K. L. McHenry No. 1 Humble-fee, T.E. R.R. Sur., ½ mi. SE of Zavalla. Drk.

Cherokee County

J. R. Bunn No. 1 S. W. Lang, Levi Jordan Sur., 7 mi. S of Rusk, D.&A. 5,160 ft.
C. C. Lanier No. 1 A. T. O'Neal, J. M. Procella Sur., 3 mi. E of Troup. S.D. 50 ft.

Collins County

G. L. Pace Pet. Co. No. 1 E. E. Hooper, J. Rutherford Sur., 2 mi. E of Blue Ridge. Sd. 2,757 ft.

Falls County

W. H. Mahon No. 1 V. H. Moore, N. K. Robinson Sur., between Lott and Rosebud. S.D.O. 315 ft.
R. L. Seastrunk No. 1 J. B. Trewitt, J. A. Manchaca Sur., 4 mi. E of Chilton. Loc.

Grayson County

Denver Prod. & Ref. Co. No. 2 Cannon, E., Barnes Sur., 1½ mi. NW of Whitesboro. M.I.M.
Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. S.D.O. 3,929 ft.

Henderson County

J. V. Scrivenor No. 1 Wm. Richardson Est., F. Holland Sur., 6 mi. NW of Athens. D.&A. 4,590 ft.
Tide Water-Seaboard-Humble No. 1 Sadie Starr McGee, R. Acosta Sur., 3½ mi. NE of Murchinson. Drlg. 7,332 ft.

Houston County

John G. Mayo and Cook No. 1 J. H. Klob, Fred Hemmeger Sur., 2 mi. N of Grapeland. Drlg. 5,802 ft.
John G. Mayo and Cook No. 1 Ida Walling, Ben Baker Sur. Loc.
Wynne Drlg. Co. No. 1 May Price, T. Strother Sur., 4 mi. W of Grapeland. D.&A. 6,114 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drk.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. S.D 30 ft.

McLennan County

C. E. Porter No. 1 B. D. Burchett, De la Vega Sur., just SE Waco. S.D. 695 ft.

Morris County

V. A. Hughes No. 1 E. Hall, L. Jordan Sur., 5 mi. NE of Daingerfield. Loc.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 30 ft.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co., G. S. Parks Sur., 17 mi. N of Clarksville. S.D. 71 ft.

Smith County

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. S.D. 1,879 ft.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. Gas blowout 148 ft.; S.D. 2,627 ft.

Upshur County

R. E. L. Johnson No. 1 Lizzie Parker, John B. Gay Sur. S.D. 103 ft.

Van Zandt County

Goody and Richards & Holloway No. 1 Rhodes, L. H. Bass Sur. Drlg. 3,695 ft.

NORTH TEXAS WILDCATS

Archer County

Birdwell Oil Co. No. 31-B Oil Inv. Co., Lot 2, John Richards Sur., 5 mi. NW of Archer City; 4,200-ft. test. Loc.
L. Sikes No. 1, Walter Ford, T. M. Cecil Sur. A-982. T.D. 4,204 ft.; O.W.D.D. to 5,500 ft.; T.D. 4,437 ft.; B.S.S.O. 4,379-4,400 ft.; cmt. 5½-in. liner on bottom and will perforate.
Westmount Oil Co. No. 7 T. J. Dempsey, Sec. 10, D.C.S.L. Sur., O.W.D.D. Perf. csg. 4,139-44 ft.; blg. wtr. and tstg.

Baylor County

British American Oil Prod. Co. No. 1 F. C. Green, T.&N.O. Sur., Sec. 215. Blg. est. 20 B.O.P.D. from 2,550-2,600 ft.; tight well.

Cooke County

H. W. Caudle No. 1 E. E. Walker, H. Gilman Sur. Loc.; 5,500-ft. test.
Denver P. & R. Co. No. 1 D. B. Allred, De Los Santos Sur. A-894. S.D.O.; ran Schlumberger; S.S.O. 1,800-30 ft.; 6⅝-in. 1,854 ft.; perf. csg. 1,813-25 ft.; tstg.
Sinclair Prairie No. 2 J. M. Best, T. Toby Sur. A-1054. 6⅝-in. 4,909 ft.; O. S. 4,909-31 ft.; comp.; 185 B.O.; 18 hrs.

Foard County

Fleetwood & Kaufman No. 1 Prowers, H.&T.C. Sur., Blk. A. Drlg. 4,360 ft.

Grayson County

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Fsg. 562 ft.
J. H. McMurray No. 1 T. J. Long, Jas. Garland Sur. A-441. S.D.O. 3,929 ft.; ran Schlumberger; S.S.O. 2,595-2,601 ft.
C. E. Marshall No. 1 F. Christman, M. Ahalt Sur. A-147. S.S.O. 830-38 ft.; tstg.

Jack County

H. R. Lippitt No. 1 S. Franklin, H. Ferguson Sur. A-215. Tstg. S.S. gas 2,825-40 ft.; rng. 5½-in. csg.
Noah Daves No. 1 K. D. Baker, Sec. 2709, T.E.L. Sur.; 4,000-ft. test. Recmt. 10-in. at 90 ft.; S.D.O. 2,320 ft.

Montague County

Lobban et al No. 1 Henry Payne, Wm. Donoho Sur. A-178. Drlg. 1,100 ft.
Youngblood & Foree No. 1 J. A. Burnett, J. Lenow Sur. A-433. Tstg. O.S. 4,653 ft.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16. Matagorda Co. Sch. Lds. Plts.

Wilbarger County

Phillips Pet. Co. No. 1 H. C. Shive, Sec. 79, H.&T.C. Sur., Blk. 14. Sat. L. 3,251-62 ft.; S.O.; 6⅝-in. 3,381 ft.; perf. csg. 48 shots; tstg.

Young County

H. M. Leidecker No. 1 J. M. Nail, Sec. 1997, T.E.&L. Sur. Drk.
Long & Lupton No. 1 A. Crouch, I.&G. N. Sur. A-1460. Drlg. 3,178 ft.
Magnus & McLester No. 1 B. B. Teague, E. S. Colthrop Sur. A-1390. Drlg. 1,293 ft.
Pitzer-West No. 1 Robt. Bulloch, J. P. Hume Sur., Abst. 140. Drlg. 3,987 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Sp.&S.D.
Art Cox et al No. 1 Lee. G. W. McBee Sur. No. 3. D.&A. 2,890 ft.
Evans No. 1 J. F. Davis, S. Tull Sur. No. 894. Spd. and S.D.

Callahan County

Dobbs Oil Co. No. 1 Finley, Sec. 75, Bayland Orphans Home Ld. Drlg. by tools 1,785 ft.
Hal Hughes No. 1 Cooke & Jordan, Geo. Hancock Sur., Sec. 350. Tstg. 4,440 ft.
J. C. Jackson and Doug. Tomlinson, Jr., No. 1 T. J. Thompson, Sec. 30, B.B.B. &C. Sur. U.R.; T.D. 1,764 ft.
Roeser & Pendleton No. 1 Chas. Yost, Sec. 18, Blk. 8, S.P. Sur. Drlg. 2,115 ft.
Warren & Kleiner No. 1 Williams, Sec. 304, S.P.R.R. Sur. Comp.; 37 B.O.P.D.

Coleman County

Arcadia Ref. Co. No. 1 W. R. Roberts, D. J. Holt Sur. Fsg. 2,685 ft.
P. A. Graves No. 1 F. Gillespie, N. B. Walters Sur. S.D.; T.D. 2,380 ft.
E. E. Kirkpatrick No. 1 F. Nixon, Burnett C.S.L. Sur. S.D. 1,385 ft.
Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D. 415 ft.
S. B. Owens No. 1 Essac Keeney, Jno. H. Woods Sur. No. 483. D.&A. 1,987 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. Fsg. 2,590 ft.
O. L. Johnson No. 1 Mrs. W. Jones, Sec. 34, H.&T.C. Sur., Abst. 1610. Rng. csg. 2,807 ft.; S.S.O.
Loraine No. 1 Carlisle, Sec. 9, Blk. 2, H.&T.C. Sur. Drlg. 1,540 ft.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D. 1,738 ft.
Hickok P. & D. Co. No. 1 Penn, Sec. 468, S.P. Sur. Tstg. 4,150 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 3,650 ft.
Collard No. 1 W. L. Payton, H. Pierson Sur. No. 1, Abst. 1105. S.D. 185 ft.

Fisher County

General Crude No. 1 M. M. Flores, Sec. 212, Blk. 1, B.B.B.&C. Sur. Drlg. 2,842 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. Fsg. baller 2,200 ft.

Haskell County

Roeser & Pendleton and I.T.I.O. No. 1 M. O. Daugherty, Sec. 19, Wise C.S.L. Sur. D.&A. 4,700 ft.
Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. S.D.R. 5,120 ft.

Hood County

Prince & Miller No. 1 J. H. Andrews, NW cor. of Geo. Sutherland Sur. S.O. at 485 ft.; C.O.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, Sec. 191, Lemuel Andrews Sur. S.D.O. in sd. 2,283 ft.
Brown Eagle No. 1 Waterson, Andrews Sur. No. 191. T.D. 2,283 ft.; S.D.
Grover, Rose & Farrell No. 1 O. D. Swanson, Sec. 193, B.B.B.&C. Sur., 2 mi. NE of Avoca. Loc.
Hedrick Oil Co. No. 1 S. T. Morrison, Sec. 137, Martinez Sur. Loc.
A. P. Kouri No. 1 W. C. Bennett, Sec. 42, C.A.L. Sur. D.&A. 2,325 ft.
Lucille Manley No. 1 fee, Sec. 4, Blk. 15, T.&P. Sur. T.D. 1,892 ft. in sand; U.R.
S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. SL, 2,428 fr. EL, J. E. Cockrell Subd. 2, G. Martinez Sur. 195 Loc.
J. H. Sproules No. 1 James Nichols, Sec. 47, Blk. 16, T.&P. Sur. Loc.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. S.D.O. 2,527 ft.
Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW Sweetwater. U.R. 3,719 ft.; H.F.W.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.&P. Sur., Abst. 1958. Drlg. 2,200 ft.
Glen Rose No. 1 H. D. Groves, SW¼ Sec. 350, T.&P. Sur. S.D.; T.D. 685 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. S.D. 3,894 ft.
Fox & Rudd No. 1 Shotwell, Sec. 59; B.A.L. Sur. Fsg. 1,632 ft.
R. H. Gordon and Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,660 ft.; S.D. 4,293 ft.

Taylor County

Roberts & Choate No. 1 A. L. Lindsey, Sec. 22, Guadalupe C.S.L. Sur. T.D. 2,377 ft.; comp.; 203 B.O.P.D.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., Sec. 979, T.E.&L. Sur. Drlg. 4,306 ft.
Danciger O. & R. Co. No. 1 C. T. Brockman, Sec. 95, Comanche C.S.L. Sur. Comp.; 12 B.O.P.D.

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Oct. 31, 1938	Sept. 30, 1938	Oct. changes	Dec. 31, 1937 reclassified
1 Gasoline-bearing crude	34,766,423	33,594,928	+1,171,495	29,417,842
2 Nongasoline-bearing crude	17,144,854	17,562,544	— 417,690	14,384,000
3 Unblended natural gasoline	3,038,914	3,402,834	— 363,920	2,001,204
4 Gasoline (not including distributing and service stations	12,506,153	11,663,318	+ 842,835	13,520,678
5 Naphtha distillates	*1,383,671	*1,352,247	+ 31,424	*1,464,577
6 Gas oil and Diesel oil	10,878,753	10,886,653	— 7,900	8,648,990
7 Fuel oil residuum	70,190,421	69,059,522	+1,130,899	54,145,388
8 All other stocks	5,413,051	5,715,707	— 302,656	4,457,568
Total	155,322,240	153,237,753	+2,084,487	128,040,247
*Estimated amount of unfinished gasoline contained in item No. 5	1,162,298	1,124,050		1,248,291

PETROLEUM PRODUCTION

By *Wilbur F. Cloud*

In the most comprehensive and completely up-to-date book of its kind yet published, Wilbur F. Cloud discusses the entire subject of production and operation, paying particular attention to the needs of the oil-company executive, the production engineer and the student. This 613-page volume includes 75 practical tables and 280 illustrations. The author is associate professor of petroleum engineering in the University of Oklahoma. Published March, 1937. Price $5.00, express prepaid.

Order your copy from

the BOOK DEPARTMENT *of*

***The* OIL AND GAS JOURNAL**

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario., Dec. 31. — West of the main Turner Valley crude area, Okalta Oil Co. No. 6, LSD 3, Section 30-18-2w5, is definitely a large commercial producer from the upper porous horizon of the Madison limestone. The test originally got the Madison at 9,731 feet and finished at 10,209 feet, encountering salt water in the lower porous zone. The water was cemented off for a test of the upper sand. The well was tubed and given a small acid treatment, when it started blowing crude over the top of the derrick every time the swab was run. Later the swab stuck, and tubing was pulled and replaced with a Lane-Wells ring packer, when the well started to flow steadily. The crude is between 37- and 39-gravity, heaviest yet found in the Madison lime in Turner Valley. The well was connected with the separator, but a definite production test has been delayed owing to the holiday season and severe cold weather. It is expected to rank with the largest crude producers in the field, and after the test is finished, will likely be treated with 6,000 gallons of acid. Bottom-hole pressure has been estimated close to 4,000 pounds, the heaviest in the field.

The test, located more than a mile west of the main crude area, was sponsored by Okalta Oil Co., headed by W. S. Herron, a pioneer of the field. Mr. Herron handled the drilling, in 1912 to 1914, of the Dingman discovery well, which started the first Calgary boom, and tied up extensive outlying acreage, which later was turned in to the Okalta company. Okalta No. 6 was started on July 12, 1936, and drilled to 3,740 feet with standard tools, when change over to rotary was made. The Madison was reached at 9,731 feet, and the hole finished at 10,209 feet, making it the deepest well in Canada or the British Empire.

Home-Millarville Deepening

In North Turner Valley, Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5, which got crude production in the upper porous horizon of the lime at 8,237 feet, with an estimated potential flow of 600 bbls. of 41-gravity crude per day, is shut down at 8,297 feet owing to bad weather. It is planned to deepen to the main porous horizon, about 475 feet in the lime, where more than 75 per cent of Turner Valley production is secured. The lime below the upper sand proved very hard, the rotary averaging less than 10 feet a day. It is expected the upper zone, properly cleared and acidized, will yield anywhere from 1,000 to 3,000 bbls. a day.

Turner Valley Completions

In Section 31-18-2w5, west of the main crude area, Anglo-Canadian Oil Co. No. 1, LSD 16, finished in the lime at 8,222 feet, is preparing for a test of the upper limestone. It has been working on an allowable of 290 bbls. a day from the lower lime.

In Section 29-18-2w5, Command Oils No. 1, LSD 14, finished at 7,908 feet, with temporary allowable of 344 bbls., is making official test. Unrestricted production is estimated close to 1,000 bbls.

In Section 20-18-2w5, Producers Crude Corp. No. 1, LSD 11, finished in the black lime at 8,045 feet, has been acidized and is flowing by heads. It looks like a good producer.

Tests in the Lime

In Section 17-18-2w5, Extension Royalties No. 1, LSD 14, is below 7,720 feet, after getting the Madison limestone at 7,- ing casing in the top of the lime at 7,277 LSD 10, is below 7,305 feet after cementing casing in the top of the lime at 7,277 feet.

In Section 9-18-2w5, D. & D. Oils No. 1, LSD 12, got the Madison limestone high on structure at 6,790 feet and is cementing in the top of the formation. The lime is nearly 300 feet shallower than in National Petroleum Corp. No. 2, LSD 14, a quarter of a mile north and east. The latter, after getting crude production in the upper lime, encountered faulting. The D. & D. No. 1 is believed to be south and west of the faulted area. It is the most southerly test in the field to get the limestone.

West Side Drilling

In the northwest extension of West Central Turner Valley, Section 5-19-2w5, Royalite Oil Co. No. 37, LSD 11, is in the lower Benton formation below 5,806 feet. In Section 32-18-2w5, George Harris and associates No. 2, LSD 15, is below 150 feet. British Colonial Oils No. 1, LSD 5, is rigging heavy duty rotary outfit from Phillips Royalties No. 1, to resume from 2,150 feet where 10-inch casing was set after pulling the 16-inch and 13-inch strings. Royalite Oil Co. No. 36, LSD 13-14, is in the lower Benton formation below 6,193 feet. Oil Ventures No. 1, LSD 14, jointly financed by the Neil McQueen interests and C. C. Cross & Co. is spudding. West Turner Petroleums No. 4, LSD 3, is rigging.

In Section 17-18-2w5, Anglo-Canadian Oil Co. No. 4, LSD 6, is preparing to rig rotary outfit.

In Section 9-18-2w5, George Harris and associates No. 1, LSD 13, is below 1,130 feet.

West of the proven field, Inland Development Co. No. 1, LSD 16, Section 18-18-2w5, is rigging. In Section 31-18-2w5, Anglo-Canadian Oil Co. No. 5, LSD 8, is working on derrick.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 35, LSD 7, Section 27-20-3w5, southwest of the Home-Millarville producer, is at 6,010 feet, and setting whipstock to sidetrack lost tools.

New Tests Planned

In West Central Turner Valley, three new tests will be undertaken in Section 5-19-2w5, by interests associated with the Mayland-Mercury group, headed by A. H. Mayland. Calwin Royalties No. 1 has been spotted in LSD 15, north of Vulcan-Brown No. 1 producer. Winalta Royalties No. 1 has a location in LSD 1, same section. A third location for an unnamed company has been made in LSD 9. immediately east of the Vulcan-Brown well.

The Brown-Moyer-Brown group is expected to start some new work, possibly on North Turner Valley acreage, after the return in January of R. A. Brown, Sr., from a trip to England.

Davies Petroleums, Ltd., is planning with United States and eastern Canada interests the organization of a subsidiary company to undertake new drilling which will likely be financed on a debenture basis. The Davies company holds two blocks, totaling 2,720 acres, north of Home-Millarville No. 2 producer, in Township 22, Ranges 3 and 4. In the south end of the field, Davies Petroleums No. 3, LSD 7, Section 33-17-2w5, standing at 3,250 feet, will be completed early in 1939.

East Side Drilling

On the Twin Dome structure, east of Turner Valley, Anglo-Canadian Oil Co. No. 1, LSD 7, Section 16-21-28w4, is below 662 feet.

Northern Foothills

On the Brazeau structure in the northern foothills west of Edmonton, Home Oil Co. No. 1, LSD 16, Section 7-43-17w5, bottoming at 4,520 feet, is cleaning heavy cavings with 10-inch casing down to 3,- 975 feet. On the Ram River structure, west of Rocky Mountain House, Ram River Oils No. 1, Township 38-12w5, is in the Devonian limestone below 504 feet. On the Clearwater structure, Altoba No. 1, Section 31-34-9w5, is drilling out cement after setting 3-inch casing around 1,300 feet. Preparations are being made to test production from a porous zone in the Devonian limestone. On the Grease Creek structure, Grease Creek-Northwest Co. No. 1, LSD 2, Section 13-29-7w5, is rigged to spud early in January.

Southern Foothills

On the Highwood-Sinclair structure, southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, Section 34-17-3w5, is below 6,567 feet and believed nearing the bottom of the Madison limestone, which was entered at 5,360 feet. A fair gas flow has been encountered, with traces of oil. In the Savannah Creek area, Anglo-Canadian Oil Co. No. 1, SW Section 20-14-4w5, is rigging, to spud in January.

Border Fields

In the Taber field, southern Alberta, North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is resuming after cementing 8-inch casing at 2,496 feet. The well has developed a heavy gas flow, estimated 9,500,000 cu. ft. a day, which will be used for drilling and camp fuel. Oil is expected around 3,000 feet.

A Victoria, British Columbia, syndicate has taken over 320 acres on the same structure from North Taber Exploration Co. and will drill a test in LSD 14, Section 12-11-15w4, starting work early in January. Drilling equipment is being moved from Calgary. Location is 1¼ miles northeast of North Taber No. 1.

On the Bridge Dome structure, Anglo-Canadian Oil Co. No. 1 Milk River, LSD 10, Section 4-2-13w4, is preparing to resume after cementing at 1,950 feet.

Saskatchewan Operations

In the Lloydminster field, western Saskatchewan, Lloydminster Royalties No. 1 deep test, 1 mile south and west of the town, uncovered a fair gas flow at 1,395 feet. It is planned to carry the deep test to 3,500 feet or 4,000 feet, to test the Devonian formation.

Steveville Operations

In the Steveville district, east of Calgary, Anglo-Canadian Oil Co. No. 1, LSD 2, Section 13-21-12w4, is rigging. Anaconda Oil Co. No. 1, LSD 15, Section 9-22-12w4, is below 2,511 feet.

Ontario Drilling

In the De Clute field, Kent County, Ontario, Union Gas Co. No. 45, Lot 143, Talbot Road North, Raleigh Township, is below 950 feet.

In the Tilbury field, Kent County, Union Gas Co. No. 309, Lot 164, North Talbot Road, Raleigh Township, finished at 1,400 feet with a shot production of 250,000 cu. ft. of gas a day.

In the Malahide area, Elgin County, Union Gas Co. No. 5 Malahide, Lot 19, Concession 5, Malahide Township, is below 300 feet.

In the Haldimand field, Union Gas Co. No. 219, Lot 17, Concession 1 North, North Cayuga Township, finished around 700 feet with 20,000 cu. ft. a day. Union No. 220, Lot 4, Concession 6, Rainham Township, finished around 890 feet with 42,900 cu. ft. of gas a day. Union No. 221, Lot 4, Concession 3, Rainham Township, is below 45 feet. Union No. 222, Lot 9, Concession 14, Walpole Township, is below 70 feet.

Warwick Shallow Field

In the Warwick shallow field, Lambton County, Archie McKercher and Ted Holmes No. 1, on the William Short farm south of the Andrews Wire Works at Watford, finished a dry hole. Frank Yerks No. 1, Thomas Westgate, Jr., farm, Lot 24, Concession 4, finished around 490 feet with a good initial production, has held up satisfactorily using the drilling rig for pumping, and has installed pumping rig for steady production.

Wilfred N. Alley No. 2, Mrs. Kadey farm, Lot 21, Concession 5, drilled by F. L. Davidson of Wingham, has finished a good producer and is being put on the pump. F. R. MacIntosh and W. J. Cole, drilling on Lot 24, Concession 6, south of the C.N.R., have a good show of oil, and are testing production. This is the most southerly test yet completed. Wilson & Sullivan No. 1, L. Marier farm, Lot 26, Concession 5, which looked like a good producer, failed to hold up, and has been plugged. Wilson & Sullivan test on the W half Lloyd Easterbrook farm, Lot 26, Concession 5, which indicated a flush of 20 bbls. an hour, has also been abandoned.

B. I. Graves, San Francisco, Calif., Tide Water Associated Oil Co. executive, said on his return from Japan that California remains "the logical source of supply" for Japan's petroleum. "Mexican experimental importations of oil will doubtless prove impractical," he said.

Hoard
Exploration Co.
Seismograph Surveys
618 Esperson Bldg.
Houston - - Texas

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Dec. 31 High	Week ending Dec. 31 Low	Week ending Dec. 31 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	70	60	70	Amerada Corp.	788,675	N.P.	50cQ	10-31-38	$3.04	$2.52	$2.00	114⅞	51½	125½	75
27⅜	17¾	22¾	21½	22½	Atlantic Refining	2,663,999	$25	25cQ	12-15-38	3.51	2.59	1.00	37	18	35⅛	26⅝
23¾	12⅛	20½	18⅞	20½	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.91	1.14	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	19	17⅝	18⅞	Barnsdall Oil Co.	2,250,344	$5	25cQ	11-1-38	0.85	1.01	1.00	35¼	10	28¼	14⅛
10⅜	7	9	8¼	9	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	2-15-39	1.48	1.18	.90	17⅞	7	17¼	11½
35⅜	21¼	31½	29½	31¼	Continental Oil of Delaware	4,682,583	$5	25cQ	12-20-38	2.98	2.05	1.50	49	24	44⅞	28⅛
9⅜	5	8	7¼	8	Houston Oil (new)	1,098,618	$25	....	10-17-30	0.94	—0.03	....	17⅝	4⅜	13⅞	6⅝
22⅝	12¼	16½	15⅛	16½	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-38	2.86	2.57	1.50	35⅜	14	30⅞	17¼
17¾	10⅝	14⅜	13¼	14⅝	Mission Corporation	1,382,945	$10	$1	6-29-38	1.31	0.48	1.25	34	15	29⅞	16¾
23	12½	15⅜	13⅜	15¼	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	4.90	2.02	(‡)	41⅜	17⅝	75½	19⅞
14⅞	8⅝	9⅞	9⅛	9⅝	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	1.30	0.70	1.00	22⅞	8	18	12⅛
15⅞	10¼	11⅜	10⅝	11⅜	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	1.39	1.58	.75	29¾	11¾	23½	11⅜
9¼	6¼	6⅞	6½	6⅞	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	1.18	0.52	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	43⅜	41½	43⅜	Phillips Petroleum	4,449,052	N.P.	50cQ	12-1-38	5.42	4.02	2.75	64	30⅛	52⅜	33⅛
25⅝	15	22⅞	21½	22⅞	Plymouth Oil Co.	1,029,800	$5	35cQ	12-12-38	2.85	1.65	1.65	29⅞	13	27¾	11⅞
13½	8¼	11	9⅞	11	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	2.15	1.63	.25	24⅜	8¾	27⅞	16
9⅞	5	9⅛	8⅝	9⅛	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	0.35	...	.25	6½	4⅛	..	..
27½	15½	21½	19½	21½	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-38	1.97	2.00	1.00	54⅛	16	44	30½
18⅜	10	15½	14¼	15⅛	Shell Union Oil	13,070,625	N.P.	35c	12-20-38	1.44	1.57	1.00	34¾	14⅞	28¼	14¾
34⅜	18½	28½	25¾	28¼	Skelly Oil	1,003,949	$15	50c	12-15-38	6.07	4.42	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	13⅝	12⅝	13½	Socony-Vacuum	31,151,071	$15	25c	9-15-38	1.82	1.38	.80	23¼	13	17½	12½
34⅞	25⅛	28⅝	27	28⅝	Standard Oil of California	13,014,754	N.P.	35cQ†	12-15-38	3.17	1.79	2.00	50	27⅛	47⅝	35
35½	24¾	28⅜	26¾	28⅜	Standard Oil (Indiana)	15,267,030	$25	25cQ	12-15-38	3.66	3.09	2.30	50	26½	48½	32¾
50⅛	32½	..	..	..	Standard Oil of Kansas	112,837	$10	$2	12-8-38	6.93	1.91	5.00	43	30⅝	31	25
58⅜	39¾	53½	51⅛	53⅛	Standard Oil of New Jersey	26,224,767	$25	50c§	12-15-38	5.64	3.73	2.50	76	42	70⅜	51⅛
62¾	45	65⅛	62	65⅛	Sun Oil	2,316,484	N.P.	25cQ	12-15-38	3.86	3.25	$1 & 8% stk.	77½	44½	91	70
4¼	1¾	3⅛	2⅞	3⅛	Superior Oil Corp.	1,388,079	$1	....	.....	0.32	0.14	....	7¾	1½	6¾	3
49⅝	32⅝	48	44⅞	48	Texas Corp.	10,875,006	$25	50cQ	1-5-39	5.02	4.10	2.25	65⅛	34¾	55¼	28⅞
5⅜	2⅝	5⅞	4¾	5⅞	Texas Gulf Producing Co.	888,138	N.P.	15c	12-15-38	0.68	0.93	.10	9⅝	2	8⅞	4⅝
12½	7	9⅞	9⅛	9⅞	Texas Pacific Coal & Oil	888,140	$10	10c	12-1-38	1.11	0.72	.40	16⅝	5⅜	15¼	7½
15⅜	10⅛	13¾	12⅝	13¾	Tide Water Associated	6,369,175	$10	25cQ	12-1-38	2.08	1.03	1.20	21⅝	13⅛	21⅜	14¾
22½	17⅛	18⅞	18⅛	18¾	Union Oil of California	4,666,270	$25	30cQ	11-10-38	2.58	1.40	1.40	28¼	17½	28½	20⅝
23½	20	23	20¾	23	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-38	1.70	1.76	1.60	31½	22	31⅝	22⅝
3½	1⅝	3	2⅝	2⅞	Wilcox Oil & Gas	506,522	$5	....	5-10-28	0.24	—0.06	...	6¼	1⅜	5¼	2¾

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend.

New York Curb Exchange

1938 High	1938 Low	Week ending Dec. 31 High	Week ending Dec. 31 Low	Week ending Dec. 31 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	9⅛	8½	8¾	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.27	$0.28	$0.40	10	6⅝	..	..
10¼	4⅞	7¼	5⅝	7⅛	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	1.90	1.26	2.00§	21⅜	7	21	13¼
39	22½	27	24¾	27	Buckeye Pipe Line Co.	200,000	$50	50c	12-15-38	4.02	4.40	3.75	51½	36	50	39¾
128	97	128	128	128	Chesebrough Mfg. Co.	120,000	$25	$2Q†	12-19-38	6.73	7.46	7.00	12	95½	124¾	105
11	5⅛	8	6½	7⅝	Cities Service (new)	3,714,317	$10	....	6-1-32	1.02	0.13	....	5⅜	1½	7⅝	3
2⅜	⅞	1⅛	1⅛	1⅛	Cosden Petroleum	462,551	$1	....	.....	0.19	...	....	5½	1½	4½	1½
27½	17½	24¼	22¼	23¾	Creole Petroleum	6,975,383	$5	50cSA†	12-15-38	1.61	1.23	1.00	38¾	20¼	39	19⅞
10¼	5½	7¼	6¾	7¼	Darby Petroleum	351,390	$5	25cSA	1-15-39	1.36	1.26	.50	18⅝	6½	18⅛	9
3½	1½	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	1.34	0.66	....	8⅜	2¼	6¾	1⅞
31	17⅛	..	..	..	Eureka Pipe Line	50,000	$50	50c	11-1-38	—0.12	—0.62	4.00	47½	24½	47½	38½
46⅞	33	40	37¼	39¼	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-38	3.51	2.90	1.00	63½	33	59	36
72⅝	56	69⅞	68⅝	69¾	Humble Oil & Refining	8,987,840	N.P.	62½c	12-27-38	5.22	3.80	2.00	87	54⅞	80	57
19½	14⅛	16⅞	16¼	16⅞	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	0.98	0.95	1.25	24¼	14½	24½	19¾
9¾	6	6¾	6	6¾	Indiana Pipe Line	300,000	$10	20c	11-15-38	1.03	1.00	.80	15	5⅞	9¾	5½
31¼	21	27¾	26½	27¾	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	...	1.81	2.50	39½	23½	39⅝	32⅝
5	2⅛	3⅜	3¼	3⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	0.17	0.20	....	8¾	2⅜	5¾	2⅝
25½	15⅝	20⅛	19	20⅛	Lion Oil Refining	434,820	N.P.	25cQ	12-15-38	2.17	1.43	1.50	34	12½	17¾	7⅜
10⅜	6⅝	9	8½	9	Lone Star Gas	5,553,747	N.P.	20c	12-22-38	1.14	1.02	.60	14¼	5¼	14¼	9⅞
9⅜	6½	7¾	6⅞	7¾	Louisiana Land & Exp.	2,977,449	N.P.	5c spl.	12-23-38	0.58	0.64	.50	15¼	6¾	15⅜	9⅞
9¾	6⅜	8¾	8⅜	8½	Midwest Oil Co.	998,444	$10	50c	12-15-38	1.14	0.95	1.00	14⅝	6¼	..	..
5¾	4½	5⅛	4⅞	5⅛	Mountain Producers	1,593,584	$10	30cSA	12-15-38	0.76	0.62	.60	7⅞	4½	8⅜	5
14⅝	11½	13⅛	12⅝	12⅝	National Fuel Gas	3,810,183	N.P.	25cQ	1-16-39	0.96	1.19	1.00	19½	12	23	17⅜
9¼	6½	7½	6¾	7½	National Transit	509,000	$12.50	40c	12-15-38	1.19	0.79	1.00	12½	7¼	15¾	9¼
2⅝	1½	1⅝	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	0.02	0.02	....	5	1⅛	6⅝	1⅝
4½	4	..	..	..	New York Transit	100,000	$5	15c	10-15-38	0.49	0.34	1.00	5⅜	3⅞	6¼	4¼
6	4	4⅞	4⅞	4⅞	Northern Pipe Line	120,000	$10	15c	12-1-38	0.78	0.66	1.00	12¾	5¾	9¾	4⅞
7⅜	3½	7⅝	6⅞	7⅜	Pantepec Oil	2,441,142	$1	....	.....	...	0.05	....	9⅝	2¾	10⅛	3¼
4½	1⅝	2⅜	2	2⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	—0.17	0.45	.25	12¾	2	19¼	4½
4	2⅛	3	2¼	3	Ryan Consolidated	296,931	N.P.	....	.....	0.46	...	....	6½	2¼	4¾	1⅞
5⅜	3¼	3½	3½	3½	Southern Pipe Line	100,000	$10	15cSA	9-1-38	0.85	0.41	.45	7¼	3⅞	7⅞	3¼
39	28¾	32½	30⅛	32½	South Penn Oil	1,000,000	$25	37½cQ	12-24-38	4.64	3.59	3.65	56	35	44	32½
22¼	17	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	12-28-38	0.95	0.97	2.00	42	20	60	44
18¾	15	17⅞	17	17⅝	Standard Oil of Kentucky	2,604,790	$10	50cQ†	12-15-38	1.60	1.46	1.50	21⅛	14¾	23⅜	17⅛
8¾	5½	7¾	6½	6½	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	—0.58	0.42	.25	13¾	8	14⅝	11
22¾	16¼	19⅞	18¼	19⅞	Standard Oil of Ohio	753,740	$25	25c	12-15-38	3.67	4.77	1.50	45	16	40	21¾
3¼	2⅛	2¼	2	2⅛	Sunray Oil	2,006,176	$1	10c	12-24-37	0.42	0.26	.25	4⅞	2	5	2⅝
5¼	3½	3⅝	3½	3⅝	Texon Oil & Land	936,024	$2	15cQ	9-30-38	0.51	0.36	.45	7⅝	2	9¾	5⅜
7⅝	4¼	4⅞	4¼	4⅞	Transwestern Oil Co.	750,000	$10	....	.....	0.48	0.06	....	13⅞	4⅝	..	..
5¼	2⅝	3¼	2⅝	3¼	United Gas Corp.	7,818,959	$1	....	.....	0.25	0.20	....	13⅞	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

Personal Paragraphs

A. C. RUBEL

A. C. RUBEL, director of production for the Union Oil Co. of California since May, 1936, and V. H. KELLY, director of sales, were elected vice presidents last week. M. G. KERR, assistant comptroller was made comptroller. Mr. Rubel succeeds W. W. ORCUTT, and Mr. Kerr succeeds GEORGE H. FORSTER, both of whom retired last Saturday. Mr. Orcutt will continue to be a director. Mr. Rubel joined the company in 1923 as a geologist and petroleum engineer. For the last three years he has directed the exploratory and drilling activities of the company. Mr. Orcutt was a member of the first graduating class of Stanford University. He founded Union's geological department, first of its type in the United States. The town of Orcutt, Calif., was named in his honor.

PAT ASHBY, president of the Twin Drilling Co., Tulsa, has announced the opening of an office in Mount Vernon, Ill. E. L. McCARTNEY is the Illinois manager.

WALTER A. JANSSEN, for years a consulting engineer in the minerals and metals industries, has been appointed chief of the Metals and Minerals Division, Bureau of Foreign and Domestic Commerce, in the Department of Commerce. He is a graduate of the University of Wisconsin.

A. WATERSTON and J. L. N. POLLOCK have been elected to the board of directors of the Anglo-American Oil Co., Ltd., marketing subsidiary of the Standard Oil Co. (New Jersey). Each is a general sales manager and each was a commissioned officer in the British army in the World War.

B. J. SKINNER, president of Mid-West Refineries, Inc., Alma, Mich., has been reelected president of the Michigan Oil Refiners Association. Other officers are: Vice president, W. L. DAVIS, vice president of Roosevelt Oil Co., Mount Pleasant; secretary, HERMAN BERG, Alma; treasurer, REID BRAZELL, vice president and general manager of Leonard Refineries, Inc., Alma.

T. F. OSBAHR, of the Solar Oil Co., was reelected president of the Oil Trades Association of New Jersey at its annual meeting in Newark. Other officers chosen were LARRY RYAN, Fiske Brothers Refining Co., vice president; WILLIAM ULRICH, American Oil & Supply Co., treasurer, and JOSEPH H. GUNN, secretary.

J. L. WELLINGHOFF, of New Era Oil Co., Belleville; LEW WALLACE, Ben Hur Oil Co., Mattoon; DR. RAYMOND C. GILLOGY, Ocean to Ocean Oil Co., Newman, and ED MARBEL, Taylorville, will be members of the Illinois House of Representatives for the next two years, assuring that oil will have at least four spokesmen during that time.

J. JOE WAGNER, San Antonio, Tex., who is drilling a wildcat in Bexar County, has left for California, with Mrs. Wagner and their baby. The trip is made on account of Mrs. Wagner's health. She will remain in California for an indefinite time, but Mr. Wagner expects to return soon.

EARL CORYELL, who operates several service stations in Denver, Colo., has announced that for every gallon of gasoline he sells he will give a half-cent to a milk fund for underprivileged children of that city. The donation is to be collected weekly and placed in the hands of a committee composed of citizens representing church, business, and social work groups.

DORSEY STRAITIFF, head of the Rocky Mountain Drilling Co., Casper, Wyo., was in general charge of the company's first annual stag dinner, given at the Casper Country Club and attended by 125 men interested in some phase of the oil business. W. W. CLINE, treasurer, served as toastmaster and master of ceremonies. DR. W. B. EMERY, formerly western division geologist for the Ohio Oil Co. and recently transferred from Casper to the main offices in Findlay, Ohio, was a special guest. W. T. NIGHTINGALE, chief geologist for the Mountain Fuel Supply Co., had the distinction of driving the longest distance to be present. His headquarters are in Rock Springs, 360 miles from Casper.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Dr. I. C. White, West Virginia state geologist, predicts that Virginia gas fields will produce at their 1913 capacity for 30 years.

A. C. Heggem, of Pittsburgh, Pa., and J. A. Pollard, of Los Angeles, Calif., U. S. Bureau of Mines engineers, are demonstrating to Oklahoma oil men how mud-laden fluid conserves gas in sands. They are working in the Cushing field, which is a big gas producer.

John Potts, of Robinson, Ill., widely known producer in many eastern fields, dies suddenly in Pesotum, Ill.

20 YEARS AGO

The United States Pipe Line Co.'s famous kerosene pipe line from the western Pennsylvania fields to Marcus Hook, near Philadelphia, Pa., may be taken up. It is 350 miles long.

Four hundred and twenty wildcats are drilling in 109 Texas counties.

Transcontinental Oil Co. has a 60,000-bbl. well in its No. 1, Lot 63, Tepetate-Chinampa district in Mexico.

The Bureau of Mines says 335,315,601 bbls. of crude petroleum was marketed from wells and stocks in 1918 in the United States.

10 YEARS AGO

John L. Shakely has been raised to executive vice president of the Frick-Reid Supply Co., in charge of the midwest division. Robert McCoy, Jr., has been advanced to Mr. Shakely's former position as vice president in charge of sales.

Twenty representative oil stocks on the New York Stock Exchange and New York Curb averaged $80.19 per share in the week ending December 31, 1928.

Clarence E. Olmsted has been made executive vice president and general manager of Texas Co. of California.

AXTELL J. BYLES, of New York, president of the American Petroleum Institute, is spending several days in Houston, Tex., visiting friends.

A. L. STRUEN, of Cleveland, construction manager for Arthur G. McKee & Co., departed from New York last week en route to Curacao, accompanied by Mrs. Struen.

DONALD WEAVER, of the Wilshire Oil Co., Norwalk, Calif., is spending the holiday season in Honolulu and will return to the Pacific Coast about the middle of January.

ALFRED HEGEMAN, of the Wauwatosa Fuel & Supply Co., was reelected president of the Oil Heating Association of Wisconsin at the annual meeting in Milwaukee. Other officers elected were E. F. FULLER, vice president; E. R. BENSON, secretary; W. C. SCOTT, treasurer.

MRS. JOHANNA M. LINDLOF, member of the Brooklyn, N. Y., board of education, speaking at dedication exercises at the Brooklyn High School of Automotive Trades, said girls should be allowed to enroll, in order to "learn what is inside the cars they drive around the city."

F. HOMER PIERSON, of Dallas, Tex., has been appointed supervisor of the Dallas office of the Texas Railroad Commission. Mr. Pierson entered the service of the commission in 1924 and for eight years was supervisor of oil fields in East Central Texas. In 1932 he was made chief investigator of proration practices in the East Texas field and a year later his duties were expanded to include the entire state.

EDWARD L. SHEA, New York, executive vice president of the Tide Water Associated Oil Co., has been elected a director of the North American Co.

C. R. ELTON, of Asiatic Petroleum Co., with offices in Shanghai, China, stopped off in Los Angeles for several days on his way to London, England.

ALEC M. CROWELL, chief agent for the Arkansas Board of Conservation, is spending the holidays in Washington, D. C., and in North Carolina.

FRANK T. PICKREL is president of the newly organized Texoil Producers, Inc., Fort Worth, Tex. F. C. DODSON and J. E. FITZ PATRICK are vice presidents.

GORDON KERR, London, and P. A. L. ENGLEBREGT, both with Asiatic Petroleum Co., sailed from New York last week aboard the Santa Rosa en route to Curacao.

FRED JOHNSTON, of the engineering department of the Union Oil Co. of California, will serve as instructor at a special class in refinery construction and transportation and production at the University of Southern California.

ROBERT E. POLK has been appointed eastern sales manager of the General Gas Light Co. with headquarters in New York, effective January 1. As general manager of the Equitable Sales Co. and utilization sales manager of the Equitable Gas Co. and Duquesne Light Co. of Pittsburgh, Pa., Mr. Polk for years has been in charge of all appliance merchandising and gas heating sales for those organizations.

Feels Entirely at Home

When John E. Taylor took over his job as chief supervisor of the Oil and Gas Division of the Texas Railroad Commission at the opening of the year he didn't look a bit shy or doubtful. He was playing on the home grounds, thoroughly familiar with the duties of his new office.

JOHN E. TAYLOR

Mr. Taylor, a well-known East Texas attorney, is an oil man in his own right and is familiar with many phases of the industry from a practical standpoint. He has had oil production of his own, in partnership, and has royalty interests. He also has had extensive legal practice in connection with the industry.

The Longview lawyer, who succeeds Laten Stanberry, resigned, was district attorney in Gregg County during the period of martial law in the great East Texas field. Before that he was county attorney in Harrison County for seven years. He has practiced law in Longview seven years.

Mr. Taylor plans to move his family to Austin early this month. He and Mrs. Taylor have a daughter, Gayle, and a son, Morton, the latter a student in the University of Texas, in Austin.

Appointment of Mr. Taylor to the important post of supervisor was announced in mid-December by G. A. Sadler, of Longview, new member of the commission. It bore the approval of Commissioners E. O. Thompson and Lon A. Smith.

N. MODRINICK, of the Shell Oil Co. with offices in Wellington, New Zealand, is in California on a business and pleasure trip.

FRANK WALLACE, assistant superintendent for the Texas Co. in Port Arthur, Tex., has been elected president of the Chamber of Commerce of that city.

I. R. CUNNINGHAM, comptroller of the Standard Oil Co. of Venezuela, left New York last Friday, returning to South America after spending Christmas in New York.

CARL J. HAMM, who retired recently as manager of the Paulsboro and Olean refineries of the Socony-Vacuum Oil Co., Inc., was honor guest at a dinner given recently by associates at Camden, N. J.

J. W. SINCLAIR, of the Union Oil Co. of California, has been appointed manager of a newly created automotive department. He will maintain offices at the company headquarters and have charge of all automotive equipment.

WESLEY CUNNINGHAM, comptroller of the General Petroleum Corp., Los Angeles, has been elected to the board of directors of the Comptrollers Institute of America, which maintains offices in New York and branches in 19 principal cities.

DR. SAMUEL C. LIND, dean of the Institute of Technology at the University of Minnesota, was chosen president-elect of the American Chemical Society in a mail ballot just completed. Doctor Lind will be president-elect of the organization for one year, familiarizing himself with the duties of the office, before becoming president.

EDWIN P. DAVIS, in the land department of the Shell Petroleum Corp., has been transferred from the Tulsa office to Centralia, Ill. Mr. Davis is a member of the Tulsa County bar.

LEE J. YEALEY has resigned as superintendent for the Ohio Oil Co. in northern Montana, retirement from active work having been necessitated by ill health. Mr. and Mrs. Yealey left their home in Great Falls to spend the holidays with relatives in Findlay, Ohio, after which their plans contemplate an extended trip, to include Florida and West Texas, with return to Montana in the spring. Mr. Yealey is an expert trapshooter.

E. W. COATES, blind since 1910, will complete 19 years of successful operation of a service station in Norfolk, Va., next April. The outlook was desperate in the spring of 1920, when W. W. Weaver, then and now an Esso Marketers salesman, prevailed upon him to open a filling station. If the venture failed he was to save the blind man from all loss. He has not been called upon. Mr. Coates, without help, pumps gasoline, using a hand pump, changes oil, and handles a line of tires and automobile accessories. Only once was an attempt made to cheat him in making change. A customer gave him a one-dollar bill, telling him it was a five. The culprit was caught quickly.

LON CRUMLEY, Great Falls, Mont., oil man, and Mrs. Crumley are spending the holidays with Mr. Crumley's mother and other relatives in West Virginia. Mr. Crumley's father was a pioneer producer in West Virginia and Pennsylvania oil fields.

PERRY THAYER, drilling contractor of Wichita, Kans., has been spending much of his time in recent weeks in the southern Illinois oil field. He has contracts for drilling several tests for the Texas Co. in that area. Mr. Thayer, who is an executive of the Comanche Oil Co., has production in the Hoisington pool, Barton County, Kansas, where he was active before going to Illinois. He contemplates moving to Illinois next spring.

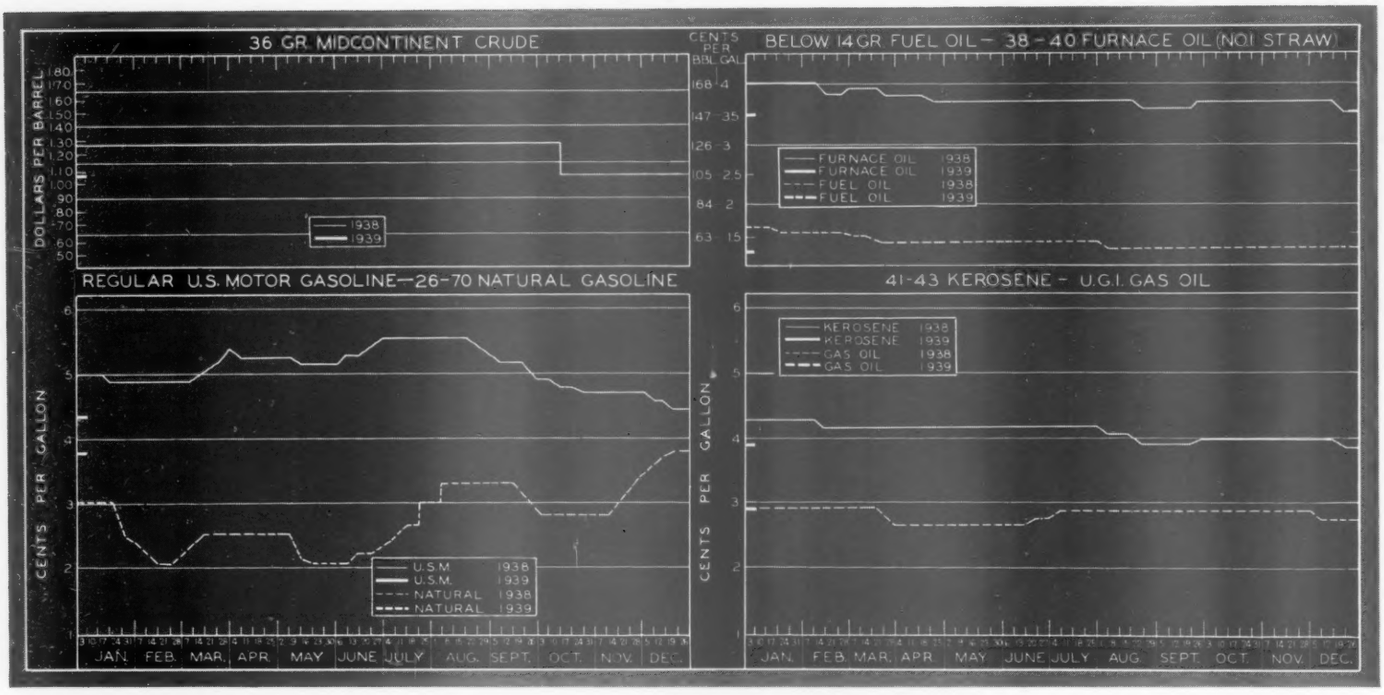
GEORGE HOXIE MOFFETT, in the service of the Standard Oil Co. of Indiana since January 21, 1896, retired last Saturday. Mr. Moffett started work in the Whiting, Ind., refinery office helping EDWARD G. SEUBERT, now president, but then keeping statistical records for the superintendent. Promotions came, and when a refinery was built near Kansas City, Mo., in 1904, he was placed in charge. He directed and developed the plant from that time. At a gathering of refinery executives and other company officials last Thursday in the Chicago offices a parting gift was presented by Mr. Seubert.

WILLIAM BERWALD, engineer in the petroleum experiment station of the U. S. Bureau of Mines, Bartlesville, Okla., was wearing a big smile the other day. It's a daughter.

GEORGE R. PINKLEY, for the past two years district geologist in South Texas for the Fohs Oil Co., has resigned to resume the practice of consulting geologist in San Antonio, Tex.

E. T. MONSOUR, for the past eight years chief paleontologist for the Standard Oil Co. of New Jersey in Mexican fields, has opened offices in Lake Charles, La., where he will specialize as a consultant in paleontology, geology, and evaluation engineering. Before going to Mexico his work was along the Gulf Coast.

DR. ROGER REVELLE, of the University of Chicago, speaking before the semicentennial meeting of the Geological Society of America in New York last week, said nature is building up new oil reserves off the coast of California. Materials rich in organic matter believed to be a source of oil are being deposited on the ocean bottom just beyond the shore line. He checked any impulse to start a leasing play by adding that it would be several million years before these would become oil pools.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Oklahoma Refiners Turn Hopefully to New Year as Door Swings on 1938

By T. F. SMILEY

As the door swung to on 1938, refiners in the Group 3 area felt a sense of relief and turned their faces hopefully toward the new year. It was a well-restrained sort of hopefulness, and close scrutiny revealed that some had their fingers crossed; but even the most dubious wore an it-can't-be-any-worse expression.

It was a hard year, with the evil spell of the Madison trials shadowing its whole length, breeding uncertainty and fear that made cooperative efforts toward stabilization impossible. Markets were demoralized, and in many instances operations were conducted at a loss. One of the largest units in the territory has been going into the red at the rate of $75,000 monthly, according to the head of its legal department.

Promise of Better Days Seen

But promise of better days was seen. The country's gasoline stocks were in distinctly more favorable position than they were a year ago. Runs to stills were more nearly in balance with demand. Consumption was making new records. Prices, absurdly out of line with manufacturing costs, were beginning to stiffen a little. An opinion commonly held was that if operations were kept to a reasonable rate for the next two months the refining industry would enter this year's season of heavy consumption auspiciously.

The past week witnessed little change in the gasoline market. Year-end dullness prevailed, but a moderate strengthening of the higher-octane grades was reported. Offerings of the old third-grade material (60 octane and below) were numerous, and concessions from published prices were said to be obtainable.

Refined Oil Market Barometer

All divisions of the refined market are affected by seasonal heaviness. Light fuels exhibiting better tone, especially in the East. Heavy fuels are continuing their advance into a more favorable position. The higher-octane gasolines are maintaining a satisfactory level of consumption and the naturals are retaining their vigor. A moderate stiffening of the lubricating oils is seen.

MID-CONTINENT. High-octane motor fuel slightly improved. Naturals tight. Light fuels firm.

EAST COAST. Light and heavy fuels more vigorous. Gasoline holding.

GULF COAST. Burning oils steady. Gasoline weak. General market quiet.

PENNSYLVANIA. Low-pourpoint bright stocks firmer. Gasoline fairly steady.

CALIFORNIA. General market improving as curtailment of crude gains effectiveness.

CHICAGO. Gasoline irregular. Furnace oils steadier under influence of colder weather.

Widening introduction of the new 67-octane third-grade gasoline seems to have created outlets for about all of it produced. One large company, which is not making this motor fuel but wants to provide it at service stations in districts where competitors handle it, was having difficulty in finding supplies. Late last week it had failed to uncover any available at less than the price ruling for the regular grade.

Natural gasoline lost none of the strength which has made it the market leader recently. Prices were unchanged in both Oklahoma and Texas. Scattered offerings of natural, totaling about 35 cars, appeared last Thursday, the owners being actuated by a desire to reduce their inventories for taxation purposes. The material was bought promptly by large manufacturers, whose concern now is to meet commitments.

The first 20 days of January usually mark the close of natural gasoline's peak period. Cold weather may prolong its season this year. This possibility acquires weight from the fact that the demand for winter-specification material did not set in till much later than ordinarily. Swollen inventories and sagging quotations resulted. In November an almost perpendicular rise began, with the market gaining vigor as accumulated supplies became depleted.

Heating Oils Getting a Break

Heating oils, which have been having a hard time this year, were getting a break at last. Cold weather throughout most of the Mississippi Basin was drawing heavily on the supplies of homes, apartment houses, and other consumers. Bulk plants were being called on to replenish low stocks, and refiners in turn were receiving not only inquiries but some of the orders for which they had been praying. How long the improved conditions would last became a question this week when temperatures rose in most of the region supplied by Oklahoma.

U.G.I. gas oil was reported in heavier demand. It was wanted, refiners said, for use as Diesel fuel rather than as cracking stock. The lubricant group was believed to be faintly improved. Wax was maintaining its strength.

Growing Strength of Fuels Is Feature of Eastern Markets

By H. STANLEY NORMAN

NEW YORK, Jan. 3.—The growing strength of both light and heavy fuels again featured the eastern refined markets in the final week of 1938. Outside of adoption of higher prices on No. 2 and No. 4 domestic heating oils by most of the suppliers who had not previously elevated quotations the market lacked any definite change.

Talk in trade circles persists that industrial fuel oil is due for a price advance from the present basic quotation of 95 cents per barrel for Bunker C material in New York Harbor. The price asked on the Gulf Coast is generally uniform at 70 cents per barrel in cargo quantities and some suppliers are not willing sellers at this quotation. Demand by both domestic and export buyers for Bunker C grade fuel oil was especially brisk during the final two weeks of December for January and February delivery.

The coastwise tanker rate continues on the bullish side. A boat was fixed for kerosene loading in January last week at 28½ cents per barrel, the most recent indication of tanker charter rates.

Fuel oil demand and market conditions are in tune with temperatures which have been at various stages below the freezing point through the heavy consuming territories in the Middle West, East and New England for more than a week. The upswing to more moderate thermometer readings was not predictable at the time this was written. Indications were that the most recent cold spell moving eastward from Canada and the Middle West would carry over into the New Year.

The motor fuel market was generally unchanged in the eastern territory last week. Primary markets on the Gulf Coast are reported firm to stronger by the stimulus of greater interest on the part of export buyers. Motor fuel of minimum 65-octane rating in the New York Harbor district was available at 6 cents by tankcar purchases for resale and this price could be shaded by an eighth to a quarter of a cent in barge deliveries. Some suppliers, however, are quoting 6⅛ and 6¾ cents per gallon for 65-octane motor fuel in tankcars. On the Gulf Coast, suppliers are quoting 4½ to 4⅞ cents per gallon for the 65-67 octane grades of gasoline and inquiries fail to disclose any particular or basic weakness in this structure. However, the low of the range is perhaps one-sixteenth of a cent below the minimum at which business could be closed two weeks ago and gives the only indication of a trend in the lower direction.

Practically all suppliers are asking 4¼ cents per gallon for No. 2 domestic heating oils in tankcars and the indications are that another eighth of a cent per gallon may be tacked to the price if the subfreezing temperatures now current continue for another period of two or three weeks. In keeping with burning requirements, kerosene markets have strengthened in this vicinity and suppliers are asking 4¾ t 4⅞ cents per gallon for tankcar deliveries to resellers. Kerosene of 41-43 gravity water white specification is held at 3⅞ to 4⅛ cents per gallon at the Gulf Coast primary market. Colder weather in New England and up-state New York, where rural consumption in space heaters and domestic ranges is particularly heavy around the holiday season was an important factor in the kerosene market of the past two weeks.

In retail trade the motor fuel market appears to be without particular feature. In coping with a local situation Socony-Vacuum Oil Co., Inc., lowered Burlington, Vt., tank-wagon prices 1.2 cents per gallon on December 22, bringing that particular point approximately in line with other New England consuming centers. The tankcar consumer quotation, which had been previously adjusted, was unchanged.

Motor fuel consumption for this season of the year is reported satisfactory in practically all directions. In several of the northeastern states the 1938 gasoline consumption is beginning just now to catch up to the 1937 volume. November gasoline tax reports from a half dozen states in the northeastern territory show increases for 1938 over 1937, the first time this set of conditions existed during the past year.

Despite lateness of the season motor fuel consumption is holding up to expectations of those observing generally improved industrial conditions and greater activity in the manufacture and distribution of 1939 automobile models. Travel over the Christmas and New Year triple-holiday week-ends was heavy and consumption was correspondingly high.

In view of the motor fuel stock position (the industry concluded 1938 with approximately 70,000,000 bbls. on hand), the interest manifested on the Gulf Coast by exporters and the reluctance of most suppliers in the primary markets to shade prices are factors arguing against any substantial reductions below the current quotations. There is the further important factor of higher tanker rates and the prospect that transportation costs may climb even higher. In keeping with inventory policies, the movement in coastwise trade for practically all of December was confined to actual requirements. Shipping instructions on file for January appear to confirm the impression that last month's business was on a hand-to-mouth basis. As an indication of what is behind the late season motor fuel consumption, Bureau of the Census figures released last week show factory sales of passenger cars and trucks for November totaled 372,358 units. In the break-down, passenger car sales claimed 320,344 units against 295,328 for November, 1937, but commercial cars, trucks and road tractors declined to 52,014 units in November, 1938, compared to 64,727 units for the same month in 1937. There was a gain of 25,016 passenger car units and a decline of 12,713 commercial vehicles. Considering the greater consumption per commercial vehicle the gain in one class just about offsets the decline in the other. The greater transportation requirements on industry, a governing factor in commercial vehicle production, is just now asserting itself with the prospect that trucks will recapture their sales and consumption position in later months.

There was not much change in the western Pennsylvania refining district last week. Some suppliers elevated their quotations for low pourpoint bright stocks from 1 to 2 cents per gallon. Bright stock of 145-155 viscosity at 210° F., 540-550 flash, No. 8 color was generally quoted at 16 to 17 cents for 10 pour test material while that meeting 15° pour test was offered at 15 to 16 cents. Most suppliers were inclining to the higher side of the range on both products, however, and it was necessary to shop for quantities at the lower figures. Dark cylinder stocks were unchanged at a range of 8 cents for 600 straightrun filterable material to a high of 13 cents for 630 flash. Neutral oils were also unchanged

(Continued on Page 102)

A. P. I. Weekly Refinery Statistics

FIGURES FOR THE WEEK ENDING DECEMBER 31 ARE UNAVAILABLE OWING TO NEW YEAR HOLIDAY

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending December 17, 1938	269,931,000 barrels
Week ending December 10, 1938	269,509,000 barrels
Week ending December 18, 1937	303,041,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of January 3, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.0	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	14.3	11.6	4.0	9.0
Grand Rapids	14.8	13.05	4.0	9.7
Saginaw	15.8	14.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†9.5
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. Dak.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	11.9	4.0	7.5
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	11.2	4.0	9.3
Wichita, Kans.	13.9	10.6	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective November 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents, 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 4.75 cents; 400 gallons and over 3.75 cents. Stanolex grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Atl'tic City, N. J.	12.7	10.9	4.0	8.0
Newark	12.7	10.9	4.0	8.0
Annapolis, Md.	14.35	12.85	5.0	9.5
Baltimore	13.75	12.25	5.0	8.5
Cumberland	16.15	13.65	5.0	10.0
Wash'g'n, D. C.	12.0	10.50	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	11.0
Charles'n, W. V.	16.55	14.05	6.0	12.6
Parkersburg	14.85	13.35	6.0	11.2
Wheeling	15.75	14.35	6.0	12.2
Charlotte, N. C.	18.15	15.65	7.0	12.1
Hickory	18.65	16.15	7.0	12.5
Mt. Airy	18.45	15.95	7.0	12.3
Raleigh	17.75	15.25	7.0	11.6
Salisbury	18.25	15.75	7.0	12.2
Charleston, S. C.	16.75	14.25	7.0	10.6
Columbia	17.25	15.25	7.0	11.6
Spartanburg	18.45	15.95	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

While the above prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.4 cents per gallon for Essolene. Dealers having pumps marked only "Esso, Essolene and Standard White" gasoline will pay 7.9 cents for Essolene. Price basis to all other undivided dealers above is Essolene dealer tank-wagon price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Tank-wag.	Gasoline Net dlr.	Gasoline Inc. tax	Kero. tank-wag.
Atlanta, Ga.	20.5	17.5	7.0	8.5
Augusta	20.0	17.0	7.0	10.0
Macon	20.0	17.0	7.0	11.0
Savannah	19.0	16.0	7.0	9.0
Birm'ham, Ala.	21.0	18.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	18.5	15.5	7.0	9.5
Vicksburg	19.5	16.5	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	20.0	17.0	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	20.0	17.0	8.0	8.0
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	19.0	16.0	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	16.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	18.0	6.0	15.5
Helena	20.0	6.0	15.5
Salt Lake City, Utah	16.0	5.0	16.0
Boise, Idaho	19.0	6.0	18.0
Twin Falls	19.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Gasoline Di-vided dlr.	Gasoline Inc. tax	Kero. tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag. sta.	Gasoline Serv. sta.	Gasoline Inc. tax.	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline T'wag. dealer	Gasoline T'car consr.	Gasoline Inc. tax	Kero. tank wag.
Albany	13.8	11.75	5.0	8.0
*Met. N. Y.:				
Manhat., Bronx	12.9	11.75	5.0	8.0
Staten Island	12.9	11.75	5.0	8.0
Q'ns & Bklyn.	12.9	11.75	5.0	8.0
Buffalo	12.9	12.6	5.0	7.5
Rochester	13.5	12.7	5.0	8.5
Syracuse	13.5	12.4	5.0	8.5
Boston, Mass.	12.5	10.5	4.0	7.5
Portland, Me.	14.0	11.75	5.0	8.75
Manch'ter, N. H.	14.5	12.3	5.0	8.5
Burlington, Vt.	13.5	12.3	5.0	9.0
Springf'd., Mass.	13.0	11.0	4.0	7.5
Worcester	13.0	11.0	4.0	8.0
Hartford, Conn.	12.9	10.9	4.0	6.5
New Haven	12.3	10.8	4.0	7.0
Providence, R. I.	12.5	10.5	4.0	7.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
Phil'delphia, Pa.	13.0	12.0	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	...	5.0	10.5
Wilmington	12.5	...	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Gasoline Tank-car con'r.	Gasoline Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.25	16.75	*10.0	†11.0
Baton Rouge	17.25	14.75	8.0	‡10.5
Alexandria	17.25	14.75	8.0	‡12.5
Lafayette	17.50	15.00	8.0	‡12.5
Lake Charles	17.25	14.75	8.0	‡12.5
Shreveport	16.00	13.50	8.0	‡11.0
Knoxville, Tenn.	20.50	18.00	8.0	14.5
Memphis	18.50	16.00	8.0	12.5
Chattanooga	20.00	17.50	8.0	14.0
Nashville	19.50	17.00	8.0	12.0
Bristol	19.00	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank-wag.	Gasoline Dlr.	Gasoline Inc. tax	Kero. tank-wag.
Omaha	17.5	16.0	6.0	10.5
McCook	17.5	16.0	6.0	10.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.4	6.0	11.0
Scottsbluff	17.0	13.9	6.0	11.5

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Gasoline Inc. tax	Kero. tank-wag.
Muskogee, Okla.	13.5	5.0	7.0
Oklahoma City	12.5	5.0	7.0
Tulsa	12.0	5.0	6.0
Fort Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	9.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline Tank-wag.	Gasoline Serv. sta.	Gasoline Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	17.0	5.0	8.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	20.0	6.0	14.5
Toronto, Ont.	21.0	6.0	15.5
Hamilton, Ont.	21.0	6.0	15.5
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Socony-Vacuum Oil Co., Inc., December 24 reduced tank-wagon dealer gasoline 1.2 cents in Burlington.

New York Market

(Continued from Page 101)

at a range of 13 to 14 cents for 52 pour test up to 17 cents for zero oils.

South Texas lubricating oils were firm on the Gulf Coast at unchanged prices. This condition of firmness on the Gulf helped to swing the Pennsylvania market upward since exporters have been active traders in both districts for the past two months. There is an increase of jobber demand in Pennsylvania, probably a result, according to reports, of greater activity by the steel mills, textile mills and other large consumers of industrial lubricants.

Wax prices are firm to stronger in both the New York and New Orleans markets. White crude scale ranges from 2.3 to 2.4 cents per pound, depending on the melting point. Domestic consumers are steady purchasers and exporters are holding to approximately their normal requirements.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of January 3, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅜	.03½
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04½
60-62 400 grades:		
62 octane and below	.03⅜	.03⅝
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04⅝
64-66 375	.04	.04⅛
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅜	.03½
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04⅝
60-62 400	.03⅜	.03⅝
64-66 375	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04¼	.04½
67-69 octane	.04½	.04⅝
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below		.04
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.03⅞	.04⅛
67-69 octane	.04¼	.04⅜
70-72 octane	.04⅞	.04⅝
60-62 400 grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.03⅞	.04⅛
67-69 octane	.04¼	.04⅜
70-72 octane	.04⅜	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¼	.04⅜
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04¼
60-64.9	.04½	.04⅝
65 octane and higher		.04⅝
68-70		.05

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¾
Grade 18-55	.04⅝	.04½

NORTH TEXAS—

Grade 26-70		.03½
Grade 18-55	.03⅞	.04

CALIFORNIA—

75-85 375-390	.06¼	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.04	.04¼
46-48 gr., 210-230 i.b.p., 480 max., e.p.	.04¾	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04⅛	.04¼

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅝

ARKANSAS (Ark. and N. La. del.)—

41-43		.04½

PENNSYLVANIA (Inland refineries)—

45	.04⅝	.04⅞
46	.04¾	.05
47	.04⅞	.05⅛

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04⅜	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03½
No. 2 dark, 32-36	.03¼	.03⅜
No. 3 zero to 15, 28-32	.03⅛	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03⅜	.03⅝

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅜	.04
No. 1 prime white, 38-40	.03⅞	.03⅞
No. 1 straw, 38-40	.03¾	.03¾
No. 2 straw, 32-36	.03⅜	.03½
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03⅛	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (Inland refineries)—

36-40	.03¾	.04⅛

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03¼
43-47 Diesel		.03¾
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)		.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¾c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
20 pourpoint	.13	.13½
25 pourpoint	.12	.12½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11⅛
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08⅝
750-3½	.08⅝	.09¼
1,200-3½	.09¼	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.16	.16½
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
25 pourpoint	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.18	.18½
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
25 pourpoint	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0235	.0250

PENNSYLVANIA (Inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0375
125-127 (a.m.p.) wax	.0390
128-130 (a.m.p.) wax	.0400
130-132 (a.m.p.) wax	.0435
133-135 (a.m.p.) wax	.0465
135-137 (a.m.p.) wax	.0490
124-126 (a.m.p.) w.s.	.0230
124-126 (a.m.p.) y.s.	.0230
Petrolatum in barrels, carload lots:	
Dark green	.02 .02¼
Amber	.02¾ .02½
Extra amber	.02⅝ .02¾
Lily white	.05½ .05¾
Snow white	.06½ .06¾
Cream	.04½ .04¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04½
60-62 400	.04⅝	.04⅞
61-63 390	.04½	.04⅝
64-66 375	.04½	.04⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03⅞	.04
41-43 water white	.03⅞	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0235	.0245
124-126 y.s.	.0235	.0245

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)*	$1.10
Van, Tex. (Oct. 11, 1938)*	.93
Talco, Tex. (Oct. 11, 1938)*	.55
Rodessa, Tex.	
See North Louisiana gravity schedule	
Cass and Panola counties, Texas	
See gravity schedule	
Altus and Tipton†	See note below
Cayuga, Tex. (Oct. 12)	.81
Clay Creek, Tex.	.85

*Humble Oil & Refining Co. †Gulf Refining Co.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Tide Water Associated Oil Co. Clay Creek posted by Sun Oil Co.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)*	$1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)†	See note below
Gibson, La. (Oct. 11, 1938)†	1.04
Garden Island, La. (Oct. 12, 1938)‡	1.24
Lafitte, La. (Oct. 12, 1938)‡	1.04
Cleveland, Tex. (Oct. 12, 1938)¶	1.14
Hardin, Tex. (Oct. 12, 1938)¶	1.02
Tepetate, La. (Oct. 11, 1938)§	1.03
Villa Platte, La. (Oct. 11, 1938)§	1.03
Abbeville, La. (Oct. 11, 1938)§	See note below
Bosco, La. (Oct. 13, 1938)¶	1.02
Creole, La. (Oct. 12, 1938)¶	.96
Gueydan, Sweet Lake and Louise, La. (Oct. 13, 1938)¶	See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)**	
Long Lake, Tex. (Oct. 13, 1938)**	1.08
Segno and Wing (Oct. 13, 1938)**	See note below
Livingston (Oct. 11, 1938)†	1.10
Gibson, La. (Oct. 11, 1938)†	1.04

*Humble Oil & Refining Co. †Shell Petroleum Corp. ‡The Texas Co. §Continental Oil Co. ¶Magnolia Petroleum Co ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, $1.01, 2-cent spread to 40 degrees and over at $1.11. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.26. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26 26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)*	$ .96
Pettus (Oct. 11, 1938)*	1.29
Flour Bluff (Dec. 3, 1938)*	1.23
Darst Creek (Oct. 12, 1938)†	.96
Darst Creek and Bruner (Oct. 13, 1938)‡	.96
Luling (Oct. 12, 1938)†	.87
Lytton Springs (Oct. 12, 1938)†	.99
Mirando (Oct. 12, 1938)†	
Government Wells (Oct. 13, 1938)	See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

North Louisiana and Arkansas

Smackover, Ark. (Oct. 5, 1938)*	$ .73
Buckner, Magnolia and Village, Ark. (Oct. 5, 1938)*	See note below
Schuler, Jones sand	See note below
Tullos and Urania	.89
Cotton Valley, La. (distillate) (Dec. 23, 1938)*	1.20
Lisbon, La. (Sept. 19, 1938)	See note below

*Smackover posted by Standard Oil Co of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938. Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolle; by Lion Oil Refining Co., October 5; Buckner, Magnolia and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Lima, Ohio	$ .90
Illinois old fields	1.05
Illinois basin	1.15
Princeton, Ind.	1.05
Western Kentucky	1.10
Greendale, Porter and Crystal, Mich. (Dec. 19, 1938)*	.78½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Dec. 19, 1938)*	.76
Freeman-Redding, Mich. (Dec. 19, 1938)*	.68
West Branch and Arenac, Mich. (Dec. 13, 1938)*	.70
Muskegon	1.00
Sherman, Mich. (Dec. 13, 1938)‡	.82
Eastern Kentucky:	
Big Sandy River†	1.12
Kentucky River†	1.20

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$ .92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.82
Dutton Creek, Wyo. (Oct. 11, 1938)†	See note below
Frannie, light, Wyo. (Oct. 11, 1938)†	.58
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)†	.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, N. M.	See West Texas gravity schedule‡
Artesia, Jackson and Maljamar	See gravity table‡
Fort Collins and Wellington, Colo.	See gravity table‡
Eddy County, N. M. (October 11, 1938)¶	.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ¶Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents, 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep, takes Standard Oil Co. of Indiana Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Graybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO (Effective September 1, 1938)	
Bradford, Pa.	$1.68
Allegany, N. Y.	1.68
SOUTH PENN OIL CO. (Effective September 1, 1938)	
Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.24
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.20
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.19
Corning Grade Oil in Buckeye Pipe Line Co. line (Oct. 18, 1938)	.97
PENNZOIL CO.	
Group A	$1.31
Group B	1.29
Group C	1.20
Group D	1.20
Group E	1.20
PURE OIL CO. (Effective September 1, 1938)	
West Virginia	$1.20

West Texas

See gravity table.	
Pecos County (Oct. 11, 1938)*	$ .78
Pecos shallow (Oct. 11, 1938)†	.65

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Crude Oil Price Changes

The Bell Oil & Gas Co., effective January 3, reduced its crude prices in the Red River Bed pool in Tillman County, Oklahoma, and the Burkburnett pool in Wichita County, Texas. The purchases are based on 100 per cent tank tables. The new price schedule starts at 67 cents for 28-28.9 gravity crude, and adds 2 cents for each degree up to and including 40 degrees and over at 91 cents. The prices are 19 cents per barrel lower than the generally posted prices in Oklahoma and 12 cents below the North Texas prices.

The Bell Oil & Gas Co. offers its crude customers in the fields named an opportunity to store a part of their oil if they do not wish to sell it all at the new prices. Up to the limit of its storage facilities the company will store oil free for 60 days and charge at the rate of 1 cent per barrel per month after that time, reserving the right to buy the stored oil at any time at the prices paid by Magnolia, Panhandle and Sinclair Prairie companies for North Texas crude.

Vancouver as Oil Outlet Figures on Pipe Line

VANCOUVER, British Columbia.—A survey prepared by the Mining Bureau of the Vancouver Board of Trade discusses the prospects of this port as an outlet for Alberta crude. The report holds that the Alberta fields must have access to world as well as domestic markets at the lowest possible cost consistent with sound transportation costs, and that Japan and various other countries bordering on the Pacific are logical markets. Imposition of tariff protection is not advocated until the domestic supply is more adequate to meet domestic requirements.

On the question of cost and route of pipe line to the coast, it is stated that from Calgary to Vancouver is 650 miles via C.P.R. and 770 via C.N.R. Difference in elevation over the former route is nearly 2,000 feet between Calgary and the summit of the Rockies while grades are more favorable over the latter. Neither presents insurmountable engineering difficulties.

Cost of an 8-inch line handling up to 30,000 bbls. a day is estimated $20,000,000 over the C.P.R. route and $35,000,000 over the C.N.R.

Estimating a rate of 45 cents a barrel as reasonable, a gross annual railway revenue of about $4,000,000 is created, leaving $2,000,000 a year for other operating expenses, after providing for interest and depreciation charges of 10 per cent. The 45 cents a barrel would be equal to a rail rate of 15 cents per 100 pounds, which is 25 per cent less than the 20-cent export wheat rate already in effect from prairie points to Vancouver.

Crude Prices by Gravities

	Oklahoma	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Hutchinson and Carson counties, Texas	Raccoon Bend, Satsuma and Tomball, Texas	West Texas and Lea County, N. M.	Fort Collins and Wellington, Colo.	Anahuac and Dickinson, Texas	Refugio, Texas	Mirando and Duval Texas	Gulf Coast Texas	Cass and Panola counties, Texas	Beaumont and West Beaumont, Texas	Lockport, Iowa, Cameron Meadows, Louisiana	Artesia, Jackson and Maljamar, N. M.	Iowa, Louisiana
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Below 18	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.74	$.79	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.74	.79	....	$.79	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.55	....	.77	.82	.77	.82	....	.82	.78	....	.79
20-20.9	$.60	$.70	....	....	....	....	....	....	.57	....	.80	.85	.80	.85	....	.85	.80	....	.81
21-21.9	.63	.72	....	....	....	....	....	....	.59	....	.83	.88	.83	.88	....	.88	.82	....	.83
22-22.9	.66	.74	....	....	....	....	....	$.95	.61	....	.86	.91	.86	.91	....	.91	.85	....	.86
23-23.9	.69	.76	....	....	$.78	....	....	.97	.63	....	.89	.94	.89	.94	....	.94	.88	....	.89
24-24.9	.72	.78	$.71	....	.80	....	....	.99	.65	....	.92	.97	.92	.97	$.73	.97	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	.65	....	.92	.97	.92	.97	.75	.97	.94	....	.95
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.92	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	.95	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	.97	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	.99	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.01	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	.73	.83	1.01	1.06	1.01	1.06	.83	1.06	1.03	.63	1.04
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.03	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.05	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.07	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.09	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.11	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	.83	.93	1.11	1.16	1.11	1.16	.93	1.16	1.13	.73	1.14
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.13	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.15	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.17	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.19	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.21	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.23	1.28	1.05	1.28	....	.85	....

Effective December 3, 1938, Humble Oil & Refining Co. revised its October price schedules as shown in Columns 3, 6, 7, 8, 11, 12 and 13. The only changes made were the discontinuance of prices on crude of 41, 42, 43, 44 and 45 degrees and over. Humble's new schedule stops at 40 degrees and over. Companies that met Humble's schedule of October 11, have conformed to the revised price schedule, stopping at 40 degrees and over.

New or Improved Equipment

National Offers Unit Designed for Deepest Pumping Needs

The National Supply Co. is introducing a new unit designed for the deepest pumping requirements. The Type TU803-H11OT is equipped with

a single herringbone-type reduction gear, with a ratio of 9 : 32. The peak torque rating is 303,000 inch pounds at 20 s.p.m. and maximum polished-rod stroke is 72 inches.

Aside from its greater capacity, the unit is identical in design with the regular National "03" series pumper line. It is made for use on concrete bases and with separately mounted prime movers. An all-welded construction with a symmetrical arrangement from the reduction gear to the four legged samson-post provides against unequal wear and misalignment. The walking-beam is a 27-inch 145-pound CB section with the saddle slotted for beam adjustment. A fully equalized pitman assembly assures equal loading on pitman, bearings, crankpins, cranks and crankshaft.

The samson-post is regularly equipped with an attached steel ladder. A ring-type back seat, otherwise known as a safety guard loop, is placed at the top for greater convenience and safety when working at the beam level. A steel safety platform is optional. For greater convenience and safety in lubricating the bearings on the underside of the beam, an arrangement for centralized lubrication has been added as regular equipment. The lubrication connections are centrally located for convenient accessibility.

National eccentric disc cranks and counterweights give infinitely and continuously variable adjustability. The weights slide around the endless circular track to any position desired, allowing the maximum in accuracy of counterweight effect and in degree of lag or lead. Adjustment is made by the power of the prime mover and the weights cannot slide off. Maximum counterweight effect at maximum stroke with two weights to each crank is 13,400 pounds and with three weights 16,500 pounds.

Bulletins, Booklets and Other Literature for the Trade

Creep stress information on the Croloys and other materials supplied in tubular form by the Babcock & Wilcox Tube Co., Beaver Falls, Pa., is available on a handy letter-size card to those interested in the design of tubular equipment for high-temperature, high-pressure service.

Oil-country applications of Hyatt roller bearings are shown in a two-page spread in the current number of Hyatt Rollergravure, published by the Hyatt Bearing Division of General Motors Corp.

A practical evaporator for generating steam from raw untreated water by using the heat in hot gas-oil or cracking-coil tar, is described in a bulletin published by the Griscom-Russell Co., 285 Madison Avenue, New York. This bulletin explains how these Bentube steam generators overcome the double problem of keeping the outside of the evaporator tubes free from hard water scale accumulation and prevent clogging of the tube interiors from tarry or dirty liquids.

American Chain & Cable Co., Inc., Andrew C. Campbell Division, Bridgeport, Conn., is sending on request a folder on "Design for Cutting Costs."

Bulletin E-22, which included detailed instructions on installation, operation and maintenance, may be procured from American Meter Co., Metric Metal Works, Erie, Pa., or from any of this company's factories or sales offices.

The current issue of Goulds CID Salesman, house organ of Goulds Pumps, Inc., Seneca Falls, N. Y., memorializes the ninetieth anniversary of the company by telling the story of its growth in an article entitled "The Last Lap of Our First Century," written by Norman J. Gould, president. It is the story of a man who refused to join the gold rush to California and, instead, stayed at home and perfected an all-iron pump, forerunner of a typical American industry.

Controlled vertical drilling methods are the subject of a 16-page illustrated booklet ready for distribution by Technical Oil Tool Corp., 1311 North Havenhurst Drive, Los Angeles, Calif. The booklet tells what they are and how they are applied to drill wells with greater economy, speed and safety.

Air Reduction Sales Co., 60 East Forty-second Street, New York, has announced two catalogs covering its line of Airco welding and cutting apparatus and supplies. Catalog 22 depicts hand welding and cutting torches and tips, pressure regulators, fluxes, rods and other supplies. Catalog 21 is designed to assist the large user of oxyacetylene equipment and electric arc-welding machines.

Union Wire Rope Co., Kansas City, Mo., has begun publication of "Rope Dope," a series of educational bulletins. No. 1 suggests the successive steps necessary for determination of the correct wire rope for replacement. No. 2 explains the different lays. Others are to follow.

A new catalog featuring oil-field rubber specialties has been issued by Patterson-Ballagh Corp., 1900 East Sixty-fifth Street, Los Angeles, Calif. It shows new products, including sucker-rod protectors, tubing-protectors, derrick-rollers and late models of wire-line guides, in addition to complete listings of drillpipe- and casing-protectors, along with engineering data.

A bulletin from Worthington Pump & Machinery Corp., Harrison, N. J., describes the Worthington saddle-mounted, vertically split centrifugal pump for oil-refinery service. Another is devoted to hydraulic decoking systems for the oil-refining industry.

Midco Develops Cleanout Tool for Well Reconditioning Jobs

Most of the trouble and expense caused by oil-well reconditioning is due to conditions faced on practically all wells, such as tightly packed formations, large pieces of junk, high or low fluid column, etc. With the object of eliminating such difficulties, the Midco Bailer Co., 1006-1012 SE Twenty-ninth Street, Oklahoma City, has perfected an improved cleanout bailer, simple and sturdy in construction and quickly adaptable at location to overcome many of the problems met in reconditioning.

The complete assembly as shown in illustration is equipped with sand-line head and large opening bottom. It is light enough in weight to be run on the sand line and sturdy enough to withstand the most severe treatment, according to the manufacturer.

The tool-head, as shown, can be installed easily at any time deemed advisable. This head permits jars and sinker to be run above the bailer, thus adding weight and permitting the operator to free the bailer easily if it should become stuck in the hole.

The snap-on sleeve permits practically all repairs to be made to the bailer at location.

Rustproof Galvanometer

Galvanometers for testing electric blasting-caps and electric circuits are precision instruments easily affected by moisture. Atlas Powder Co., Wilmington, Del., has announced a galvanometer which is said to be proof against moisture and water even under the extreme conditions sometimes found in large tunnels and shafts. In addition, the manufacturers say, the new galvanometer has a higher factor of safety, separate cell compartment, and a lighter noncorrosive case, and is easier to use.

Worthington Makes Promotions

Worthington Pump & Machinery Corp., Harrison, N. J., has appointed Walter B. Strong assistant general sales manager. Formerly manager of the company's export division, Mr. Strong will continue general supervision of export sales, and will also be identified with certain phases of domestic sales work. George Gellhorn, Jr., will succeed Mr. Strong as manager of the export division.

Malleable-Base Screw Jack Is Designed for Rough Handling

Templeton, Kenly & Co., screw and lever jack manufacturer, has announced a new line of malleable-base screw jacks. The maker states that bases of malleable iron are tougher and less

subject to breakage due to dropping or rough handling. Jacks are lighter in weight and a peephole in the malleable base enables the operator to see how far the screw can be run out safely.

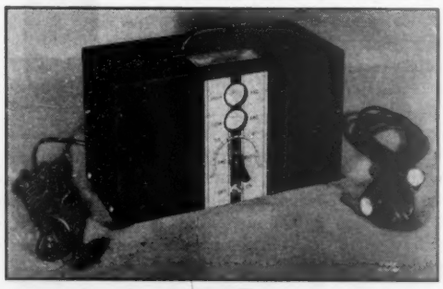
In addition, the manufacturer claims that friction is reduced 88 per cent because of the floating cap which rests on a chrome-molybdenum steel ball. This cap has a 9-degree float, which completely centers the load. Principal sizes of the Simplex screw jack line are now furnished with malleable bases. Simplex jacks are sold by leading mill supply houses and equipment dealers, who are now supplied with stocks of the new models. Bulletin SJ-39 is available on request

Uniformly High-Quality Welds Possible With Smith Device

Uniformly high-quality welds, particularly for applications where the expense and inconvenience of X-ray do not seem justified, are said to be made possible with the Arc-Length Monitor, developed by the research division of the A. O. Smith Corp., Milwaukee, Wis.

In most welding applications there has been no routine method to insure high-quality work with this universally accepted production tool. Heretofore quality was at the mercy of the human element, which rested upon the training, experience and attitude of the individual welder.

The Arc-Length Monitor helps the worker make a good weld while he is in the act of welding. Smith research proved long ago that, while control over voltage of itself is no definite assurance of a good weld, in nearly every case of poor



welds there was a relation to the voltage involved. This situation, if controlled through definite indications to the welder during the process of welding, removes one of the main variables in welding technique. Thus it promotes higher quality welds.

The welder is informed of the length of his arc by means of two tiny bulbs, mounted inside his welding helmet, one on each side of the window through which he observes the arc. Both bulbs are normally dark at the selected voltage. The one to the right glows faintly, and with increased intensity, as the voltage increases from that selected; the one to the left responds similarly as the voltage decreases from that selected. Maximum brilliance is kept well below the point of hurting the operator's eyes or interfering with his work. The instrument itself, which contains signal lights similar to those in the welder's helmet, is placed where it can be observed by the production or welding supervisor.

The Monitor will be found particularly effective where very light gauge materials are used, particularly such expensive metals as stainless steel, requiring close control of the arc. It has also proven invaluable for periodically checking the ability of experienced operators and training new operators.

Swamp Buggy Licks Obstacles Offered by Mississippi Mires

Man makes earthquakes to order in the crude-oil explorations, which grow more scientific every day. These earthquakes are set in motion by explosives, so their reflections from subterranean layers of prehistoric rock can be measured in nearly a dozen ways. Since the ancient rock formations that might pocket a hidden oil fortune occur as often under Louisiana swamps as they do under the paved streets of Texas towns, man was compelled to devise a means to overcome their marshy hazards.

These swamps were impassable to human beings until swamp buggies, such as this Continental Oil Co. explosives truck, were built. This swamp buggy actually floats its weight of several

tons over the deep mire on huge Firestone ground-grip tires. The tires are kept at a low air pressure to cushion the truck's testy cargo from jarring on the clumps that support the driver and his helper.

The swamp buggy offers to contractors and others who work any kind of land a demonstration of the reasons why these tires are being used on more and more tractors. On a tractor the flotation of balloon tires will keep a tractor pulling hard through mud that would let it sink to the hubs if it rolled on cleated steel wheels. The cushioning protects the tractor and eases the ride for the operator. Furthermore, the Firestone ground-grip tread exercises a shearing action on the surface of the ground, which delivers the maximum of power on soft and slippery surfaces.

New Orifice Meter Handbook

Pittsburgh Equitable Meter Co., Pittsburgh, Pa., issued a new handbook, "The Orifice Meter." This volume, written by Allen D. MacLean, chief engineer of the company, contains valuable information relating to orifice meter measurement. Included in this 150-page pocket size book, with numerous illustrations, diagrams and charts, is a complete story on measurement by orifice. The theory and mathematics necessary to understand the principles involved, together with equations and tables to accomplish the measurement of any normal gas or liquid, are included. Copies, at $2 each, can be obtained from the Pittsburgh Equitable Meter Co., 400 North Lexington Avenue, Pittsburgh, Pa.

Hazard Old-Timers Represent 695 Years of Employment

Hazard Wire Rope Division of American Chain & Cable Co., Inc., Wilkes-Barre, Pa., carries on its pay roll the names of 14 employes, each with an

individual record of 40 to 67 years of service, these men representing a total of 695 years of continuous employment with one organization. The illustration shows 8 of the 14: Back row: Philip Henry, 46 years of service; George Hoats, 67; Wally Scnuler, 49; Pat O'Toole, 57. Front row: Pete Swinburne, 56; Hugh Murray, 50; Tony Blaum, 49; Bill McCarthy, 45. The six others not shown in the picture because their duties take them away from Wilkes-Barre are: Fred Walters, service of 56 years; Benjamin J. Hill, 49; Philip Schumacher, 47; George D. Wicks, 43; Robert A. Stucke, 41, and Fred Vogel, 40.

Patents on Twinweld Hose Are Received by Hewett Rubber

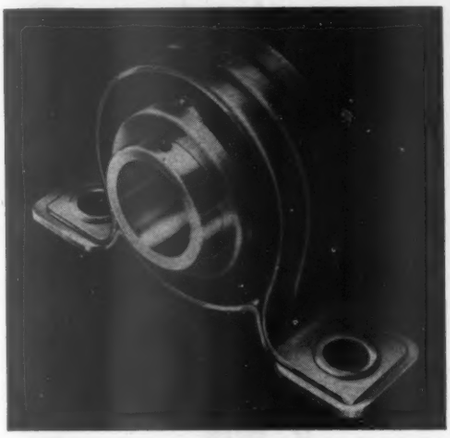
Hewitt Rubber Corp., Buffalo, N. Y., has received patents on its Twinweld welding hose. Two patents were obtained, one for a multiple passage hose (No. 2136230) and one for the method of making multiple passage hose (No. 2122335). The inventors are Michael Berman and William Brockner, Hewitt technical superintendent and plant superintendent, respectively.

This new contribution to welding, employed to convey oxygen and acetylene for welding and cutting work, consists of two lines of unusually flexible, cord-reinforced welding hose, formed by a 22-foot multiple-cavity mold at a temperature of 290° into a single unit. It does not kink, and taping is not needed. It is not necessary to have a tangled mass of hose on the floor, which not only makes for inconvenience and lost time, but which constitutes an accident hazard. The new hose does not

writhe and twist under high pressure. Any differential of pressure in one line has no effect on its companion line. The individual passages have an inner lining of nonblooming gas-resisting compound that is cord reinforced. The carcass is extra strong and is said to resist pressures many times greater than those incident to welding service.

SKF Rubberflex Pillow-Block Is Rugged and Sound-Insulated

SKF Industries, Inc., Front Street and Erie Avenue, Philadelphia, is introducing the new Rubberflex pillow-block, a compact, sound-insu-



lated unit, the result of more than two years' research. It comprises a self-locking bearing of the SKF grip-lock type. This bearing is inherently aligning, thus compensating for inaccuracies of set-up and conditions of shaft misalignment without binding or impairing the load-carrying capacity. Use of this unit brings about manufacturing economies because it requires no machining of the shaft.

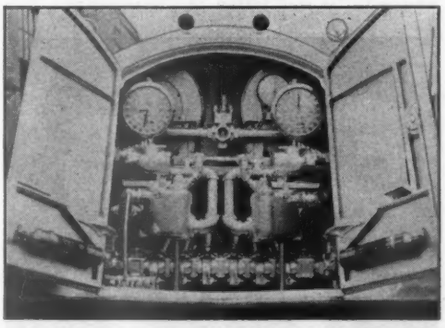
The bearing is encased in a pressed-steel housing equipped with felt seals to exclude dirt. The housing is provided with means for lubricating the bearing. The bearing and housing are surrounded with an elastic material having special sound-absorbing characteristics, and the material has been specially treated to make it impervious to oil and grease.

Free from vibration, this unit is said to carry substantial loads under practically all operating conditions. Its unit construction facilitates mounting.

This rugged pillow-block has wide application in fields requiring antifriction bearings with unusually quiet operating characteristics. It is being released first in the three-fourths and 1-inch shaft sizes, and is obtainable through more than 800 company representatives in the United States.

Modern Marketing Methods in Balkans Shown by Equipment

Progressiveness in oil marketing methods in the Balkans is evidenced by the purchase of several streamlined White Model 712 tank-trucks with 172-inch wheelbase by one of the major oil



companies for delivery to Piraeus, Greece. The illustration shows the rear end of one of these trucks, which carry 1,100-gallon Heil elliptical tanks with three compartments of 550-, 350-, and 200-gallon capacities. Two 30-gallon lube-oil tanks are installed on one side, provision being made for lagging these tanks with felt for extremely cold weather. Fittings are provided for immersion heaters.

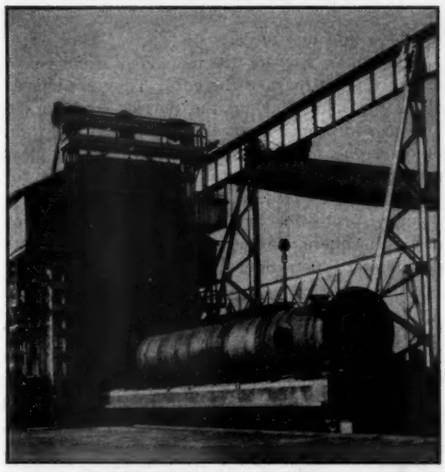
The two 2x70-inch meters shown were manufactured by the Ralph N. Brodie Co., Oakland, Calif. A 1¼x30-inch Brodie meter is also mounted on the side. The picture shows the construction and placement of the meters, hose-reels, fire-extinguishers, pumps, piping and valves.

Allis-Chalmers Branch In Newark

A new branch office and warehouse of the Allis-Chalmers Manufacturing Co., of Milwaukee, Wis., was being established in Newark, N. J., this week in the Industrial Office Building, 1060 Broad Street, that city. The new office will be a branch of and under the jurisdiction of the New York district office of the company, and is expected to provide additional service in the Newark area for Allis-Chalmers motors, pumps, texrope drives, power transmission units, and other equipment in the company's line. C. A. Pihl has been appointed as Newark branch office manager.

Stress-Relieving a Tower

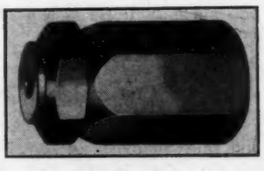
The illustration shows a depropanizer tower, 5 feet 6 inches in diameter and 42 feet high, being stress-relieved at the Birmingham, Ala., plant of the Chicago Bridge & Iron Co. This is a particularly complicated piece of fabrication, owing to



the large number of manholes in the tower shell. The tower, fabricated for the Standard Vacuum Oil Co., has been shipped to Sumatra for installation there.

Perfect Atomization Is Attained With New Type Spray Nozzle

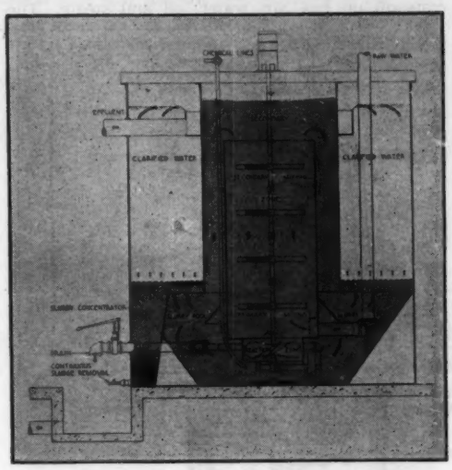
The atomizing spray nozzle placed on the market by Spraying Systems Co., 4922 West Grand Avenue, Chicago, is of the hollow-cone type, with uniform distribution and, according to the manufacturer, perfect atomization. These nozzles are



of sturdy construction, accurately machined, and are available with male or female quarter-inch pipe connections, with or without strainer. Capacities range from 1 to 14 g.p.h. at 40 pounds pressure. Standard stock construction is brass with stainless steel inserts. Other metals can be specified. The nozzle is for humidifying and various industrial and chemical processes.

Accelator Water-Softener Has Wider Range of Capacities

The Accelator, a water-softener developed and manufactured by International Filter Co., 59 East Van Buren Street, Chicago, now is available in



capacities to meet a wide range of requirements. Advantages, according to the manufacturer, include more complete and rapid softening of water, lower cost and smaller space requirements. The Accelator is not a mere departure in design. Its underlying principle is an entirely new treating method. Chemicals are applied to the water in a new way. Reactions occur under new conditions.

Sedimentation is not employed in the Accelator. Instead, water actually is squeezed from the top of a recirculated pool of slurry. With this process, means are provided to hasten the chemical and physical reactions involved, and because of this, space requirements are reduced, effecting substantial savings. Complete information is given in Bulletin 1820.

Tubbs Rope at California Show

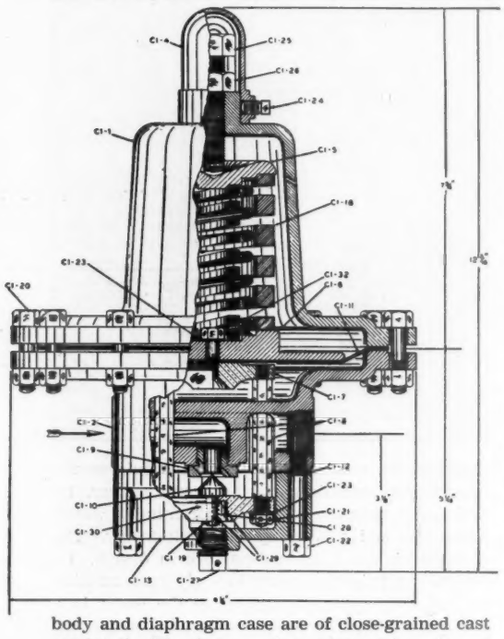
One of the largest and most interesting buildings at the world's fair in San Francisco will be the Palace of Mines, Metals and Machinery in which will be located the exhibit of the Tubbs Cordage Co., makers of rope and twine. Here, in over 60 feet of aisle space, the company will exhibit actual rope-making machinery in operation. Beautifully colored slides will be shown continuously, depicting the story of the making of rope and its use in industry.

MacWhyte Metallurgist Honored

Patient study and experimentation on rope wire were rewarded when Walter R. Bloxdorf, metallurgist of the Macwhyte Co., Kenosha, Wis., received from the Wire Association the supreme award for the outstanding contribution to the industry for 1938. A bronze plaque was presented by the board of directors of the National Metals Congress, of which the Wire Association is an affiliate, at its recent convention in Detroit, Mich. The basis for the award, which is a coveted one, was a paper presented by Mr. Bloxdorf dealing with metallurgic processes in the manufacturing of rope wire. Mr. Bloxdorf first was employed in the chemical and metallurgical departments of the Macwhyte Co. in 1923. From 1924 to 1928 he studied chemical engineering at the University of Wisconsin, returning to Macwhyte in 1928. He has served since 1931 as chief metallurgist.

Pressure-Reducing Regulators Developed by Hanlon-Waters

The Type 260 pressure-reducing regulator, offered by Hanlon-Waters, Inc., Tulsa, is designed for reducing and controlling the reduced pressure constant on gas, air, water, oil and steam. The



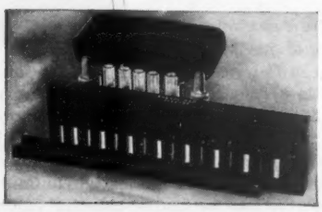
body and diaphragm case are of close-grained cast semisteel. The inner valve, plug and seats are 18-8 stainless steel. The diaphragm is a synthetic composition, impervious to the action of hydrocarbon oils and gases, except for steam service when a metallic diaphragm is employed.

The multiple spring construction and absence of stuffing-box friction make for close regulation of the reduced pressure. The inner valve plug and seats are readily accessible for replacement or changing sizes. Lower adjustable reduced pressure ranges can be obtained by removing one or two of the inside springs. Reduced pressure adjustment is made by means of the adjusting screw under the weather-cap.

Construction is rugged, making the regulator desirable for field use. The regulator is suitable for maximum inlet pressure of 300 pounds and can be supplied with several adjustable reduced pressure ranges from 5 to 100 pounds.

Ease and Durability Offered by Taylor Slide Comparator

A new slide comparator for the colorimetric determination of pH, chlorine and phosphates has been developed by W. A. Taylor & Co., 872 Linden Avenue, Baltimore, Md. The new outfit is molded entirely from plastic. Radical changes in design have resulted in marked improvement in appearance, durability and ease of handling. The weight has been reduced. All pH, chlorine and phosphate values, as well as the indicator names, are engraved in white directly on the plastic slides. Improved catches are used to hold the top on the base and all metal parts are rustproof. The whole outfit, including the slide, is 10 inches long, 2⅛ inches wide and 4 inches high, and it weighs only 1⅛ pounds.



The new comparator consists of a slide and a base. Each slide contains nine color standards alternating with ampoules of distilled water. All color standards are guaranteed by the manufacturer to maintain their accuracy for five years.

The base contains two vials of indicator solution, with 0.5 cc. pipettes, five 5 cc. test-tubes, and a piece of etched glass in a special compartment. Determinations are made by filling three of the test-tubes with the sample, adding 0.5 cc. of indicator solution to the middle one, placing the slide on the base and moving it back and forth until the sample matches one of the color standards. The pH, chlorine or phosphate value is then read off directly from the values on the slide. One base can be used with any number of color standard slides.

Unusual Salvage Value Marks System of Derrick Lighting

A new system of derrick lighting introduced by the Sullivan Machinery Co., Michigan City, Ind., is of one-piece construction. According to the manufacturer it is easily installed and removed, has 100 per cent salvage value, with no connections on the derrick.

Vapor-proof String-a-Lite is an assembly of rubber-covered cable, consisting of 200 feet of power line, a main line to the crownblock, two branches for the first girt and one for the fourble board, and two 50-foot light-weight extension lamp cords, all moulded into one piece.

The outlet sockets are molded of rubber and are an integral part of the cord. They are spaced along the main line up the derrick and on the branches at proper intervals. The socket and light bulb are encased in a globe of heat-resisting glass protected by a heavy metal guard. The holder for the globe and guard is also molded into the cord, assuring protection against sparks in gaseous or oily atmosphere. Bulletin B-14 contains complete details and illustrations.

Chadderdon Heads Fisher Governor

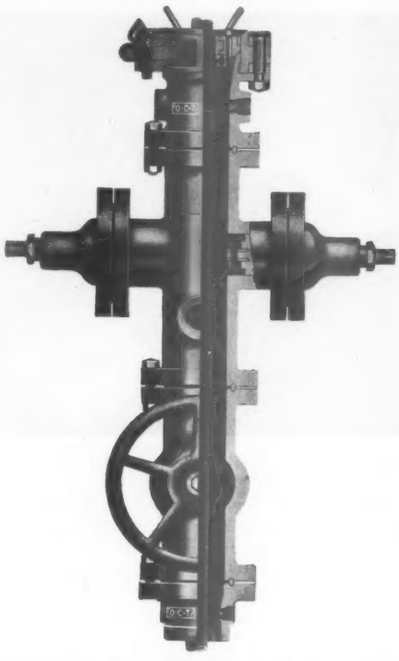
N. T. Chadderdon, new president of the Fisher Governor Co., manufacturer of automatic control specialties, was honored at a banquet given recently by Fisher employes at Hotel Tallcorn in Marshalltown, Iowa. Mr. Chadderdon succeeds the late Jasper H. Fisher as president. Announcement of his election was made at the banquet. Guy L. Reed, vice president of the Harris Trust & Savings Bank of Chicago, and a boyhood friend of Mr. Chadderdon, was the principal speaker. Mr. Chadderdon has been secretary-treasurer of the company for several years and he will continue to serve as treasurer. He has been with the Fisher organization since 1931. He is a graduate of the University of Nebraska.

Emery Organizes Own Company

Jess W. Emery has resigned as vice president and sales manager of the Texasteel Manufacturing Co., Fort Worth, Tex., to organize his own sales and manufacturing company. Mr. Emery has been associated with the oil equipment industry in the Southwest for over 18 years and was with W. C. Norris Co. prior to his connection with Texasteel. The new company, the Tex-Ark-La Co., will have offices and stores in Fort Worth and Kilgore and will handle oil-field production equipment.

Method of Running or Landing Pipe Under Pressure Offered

An efficient method of running and landing casing and tubing under pressure is said to be offered by an O-C-T stripper-rubber type blowout-



preventer installed above a ram-type blowout-preventer. A conventional master valve is used below the ram-type preventer.

The illustration shows the pipe passing through the O-C-T blowout-preventer, the stripper rubber passing pipe-collars, yet effectively holding well pressures. The ram-type preventer and master valve are in open position to permit passage of the pipe.

In the next step the ram-type blowout-preventer is closed around the pipe while the stripper-rubber assembly is removed from the O-C-T preventer to permit passage of the hanger.

Next the hanger passes through the master valve to seat in the head below after the stripper-rubber assembly has been reinstalled in the O-C-T blowout-preventer and the ram-type blowout-preventer has been opened.

At no time during the operation is the well without blowout-preventer protection. All wear is absorbed by the stripper rubber in the O-C-T preventer.

Brodie Personnel Changes

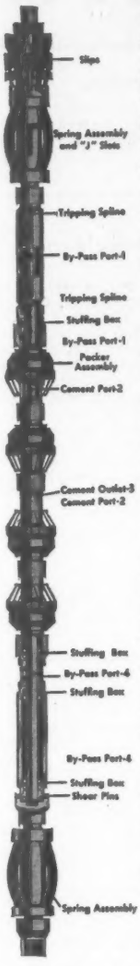
A. G. McNeil, field engineer of the Ralph N. Brodie Co., replaces George B. Richards, of Tulsa, who is to be transferred to the company's New

McNEIL *RICHARDS*

York offices. Mr. McNeil goes to Tulsa from the company's engineering department in Oakland, Calif.

Nothing to Be Drilled Up After Yowell C.P. Cementing Job

A new tool that incorporates in a single unit means for packing off a section of casing in order to perform multiple stage liner or high-pressure cement squeeze jobs has been announced by O. P. Yowell Service Co., Santa Fe Springs, Calif. This tool, the Yowell C.P. cementer, does the work of a bridge below and a packer above the cementing point, and when removed from the hole upon completion of the job leaves nothing to be drilled up or removed later.



The cementer consists essentially of an outer barrel having a series of pack-off rubbers, and an inner telescopic member that provides positive control over the direction of the fluid circulation. Slips are used to anchor the tool in place during cementing operations.

An important feature is that the cementer can be moved to another C.P. point in the hole without coming out for adjustment, thus permitting multiple stage cementing operations to be performed without coming out of the hole. After each job is completed, circulation can be reversed to clean the tool thoroughly. Cleaning and pumping out excess cement are carried on with the lower part of the hole packed off against all pump pressure or pulsations, so that the cement slurry behind the casing will not be affected. Circulation can be established whenever desired while going in or coming out of the hole.

The Yowell C.P. cementer is engineered for all high-pressure cementing jobs and can be run with equal efficiency on either tubing or drillpipe.

Year Saw Increasing Number of Hard-Facing Applications

A wide variety of new applications of wear-resistant alloys gained favor in oil-field and refinery work during the past year, according to C. W. Metzger, of Haynes Stellite Co., Houston, Tex. Three new designs of tungsten carbide inserts for hard-facing rotary drilling-bits have been introduced. All three have the same improved cross section, and their different lengths provide a range that covers practically all bit requirements. The new inserts have a flat surface which prevents rocking when placed on a bit for hard-setting.

Metallurgical developments of wear-resistant alloys include a constant increase in the hardness of the cast tungsten carbide hard-setting and hard-facing materials, with full retention of the necessary toughness. That such products can withstand severe drilling is illustrated in the case of the world's deepest oil well, Continental KCL A-2 in California. Here Haystellite tungsten carbide products were instrumental in drilling 6,374 feet of the total depth. The first bit, a 20½-inch, four-way drag bit, drilled 497 feet in 10 hours, almost 50 feet per hour. Ten similar but smaller bits dressed with Haystellite tungsten carbide drilled 4,787 feet in 200 hours.

Trenching machine teeth, blades and bits for drilling shallow holes, undercutter reamers, underreamer lugs, core drills, and many types of equipment for similarly abrasive service are being more extensively hard-faced. Refinery pumps and valves, boiler feed valves, and christmas-tree valves, with hard-facing alloy already applied to important wearing surfaces by the pump or valve manufacturer, have come into greater favor.

Haynes Stellite J-metal and the newer Haynes Stellite-2400 metal cutting tools are being used successfully for machining the recently developed tough alloy steels used in the oil fields.

Here and There With Men Who Manufacture Equipment

Henry M. Reed has been elected chairman of the board and president of American Radiator and Standard Sanitary Corp. and chairman of the board of American Radiator Co. He will continue as president of Standard Sanitary Manufacturing Co.

Edward H. Ross has been appointed Mid-Continent sales manager for the Dragon Manufacturing Co., Marietta, Ohio, and will maintain headquarters in Tulsa, Okla. Mr. Ross was formerly with the Charles N. Hough Manufacturing Co. in Shreveport, La.

Truck for Asia Minor Shipped on Crack Passenger Train

Rivaling the rush to gold fields, the opening up of new oil lands, even in the farthermost corners of the world, starts a scramble in which the great oil companies take part. No expense is spared to get men and equipment into the field. A day or an hour may see tremendously valuable advantages gained or lost.

One of the latest of these great oil field discoveries is in the Near East, where large American oil producers are bending every effort to acquire the greatest possible share of productive territory. Transportation of men and machinery in the great deserts puts an extraordinary burden on automotive equipment, which must cope with loose, shifting sands; climb drifts and dunes, and ford mud-bedded rock-strewn streams and wadies. Yet men and equipment must be moved.

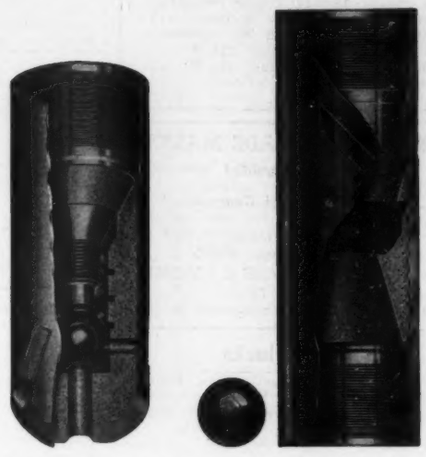
Many Marmon-Herrington all-wheel-drive trucks are now operating in these oil fields in the

Levant, as they are in Europe, South America and other far-off places; and new shipments are being made every month to users who have proved the efficiency of these units on the world's most difficult hauling jobs.

The Marmon-Herrington truck illustrated here is being shipped in a special express car, attached to the Pennsylvania Railroad "American," crack passenger train. It is intended for scouting and geophysical survey service. A special body containing the instruments and implements for this work was shipped by a geophysical survey company to Marmon-Herrington where it was mounted on a specially engineered all-wheel-drive Ford chassis. The shipment by express, on the particular train was necessary to catch the scheduled sailing of the steamer Selma City to Asia Minor.

Baker Introduces New Type of Equipment for Cement Jobs

A new design of float-shoe particularly adaptable for two-stage cementing and for single cement jobs that require high pressure to put away the cement or to break circulation without putting a strain on the liner or casing has been announced by Baker Oil Tools, Inc., Huntington Park, Calif. The new Baker duplex cement washdown whirler float-shoe provides for the placement of the slurry through tubing or drillpipe. When a second stage of cementing is to be done



above the shoe, the new Baker whirler bridging collar is placed in the pipe at the bottom of this upper stage.

The internal mechanism consists of a concrete plug in which is embedded a ball-type float and back-pressure valve. Leading off from the central fluid passageway through the shoe are ports at the outer end of which are baffles. These baffles direct the flow of fluid or cement slurry in a downward whirling motion. The valve-cage extends to the top of the concrete plug.

Cementing is done through a string of tubing or drillpipe on the bottom of which is a Baker circulation joint and bottom sub. This cementing string is run in and screwed into the shoe after the liner or casing has been run into the well. Circulation is broken and the cement pumped down the tubing and through the whirler-ports in the shoe at any pressure necessary. The cementing string is then immediately unscrewed and removed from the well.

The Baker whirler bridging collar used for the second stage of cementing consists of a whirler collar, below which is a seat for a bridging ball. The cement can be placed by the conventional plug method or through a cement retainer set above the ports when high pressure is required to break circulation or place the cement slurry.

Seals Gasoline Engine Ignition System From Rain and Fog

Ignition seal is said by the manufacturer, Fred M. Joerndt, 221 North Dearborn Street, Chicago, to be just what its name implies, a device that seals and waterproofs the wiring and entire ignition system of gasoline engines for automobiles, trucks, tractors, buses, motor-boats, airplanes, and motorcycles, against rain, snow, and fog, or what are commonly known as "moisture shorts."

It is applied by brush or spray to all exposed parts of the entire ignition system, including spark-plugs, distributor, and coil, thereby making them entirely weather-proof, as well as thoroughly insulated. It forms a thin transparent insulating film over all insulating, as well as exposed wiring or connections. Applied to battery terminals, it eliminates the usual corrosion.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER
Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS
All cases submitted given personal attention.
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees—FREE
LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg., Washington, D. C.

Legal Blanks

SINCE 1908 Burkhart's legal forms—serving Mid-Cont. & Illinois oil fields. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Special Services

TUTORSHIP for government Junior Engineer examination.
J. HABEGER, Lamar, Mo.

Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

320 ACRES, Crane Co., Tex., Magnolia lease, cheap in fee. Address 415 Littlefield Building, Austin, Texas.

LEASES—ROYALTIES near Ordovician and Woodbine-Trinity sand wildcats. Quick plays for 50 to 1 chances. E. CROFT, PROCTOR, TEXAS.

720 ACRES E. Kans., gas proven, oil chances deeper, assign ½ int. and drill well reasonable. Address Lessee, 3612 Wyandotte, Kansas City, Mo.

FEE OWNER will lease for drilling 80 acres in trend on structure, center of Pure block, W½ of NW¼ of Sec. 14, 4 N, 9 E, Richland County, Illinois. Joines section in which Pure have just discovered their finest sand pool in Illinois. My source of information shows this acreage to be in proven trend. If able to buy and develop at once, this high class acreage, communicate with owner.
JOHN PERRING,
Champaign, Illinois.

5 ACRE Mineral Deed, Landowners Royalty under entire 80 acres of land leased to Gulf Oil Co. being N½ NW¼ sec. 30, twp. 14s, rge. 31e, full price only $32.50. Perpetual and full participating. Send your check. Guarantee delivery. P. O. Box 968, Hobbs, N. Mex.

FOR SALE—15 Bbl. production 20 years old, no proration, 15 wells. 700 ft. 20 ft. sand average, oil 31 grav., large acreage undrilled. Two good powers, electricity close. Pipeline market, good truck markets available. Three Major companies have very successful water drives in same sand nearby. Located Bourbon Co., Kans. Price $20.000. Owner, Wayne Yount, Ottawa, Kans.

FOR SALE—Blocks of 250 to 5,000 acres 5 to 10 year term oil and gas leases located on structures near oil and gas producing wells. Two structures are geologically approved. Low rentals. Depth of drilling 450 to 800 feet. W. P. HARLEY, Bowling Green, Kentucky.

Leases and Drilling Blocks

I HAVE 410 acre Lease in Hamilton County, Illinois, close to where they are now drilling for oil which I will assign for a reasonable figure and drilling commitment, also have a larger block of acreage in Hamilton County, Illinois, which I will make a deal for a reasonable figure and a drilling commitment. If interested write George W. Hogan Jr., McLeansboro, Ill.

NEW MEXICO
State Oil and Gas Leases
Forty acres and multiples thereof at $6.00 to $30.00 per forty in the Hot Spots. Buy where the major companies own leases. Write for list. Twenty years in the business and not a complaint.
HARRY S. WRIGHT
New Mexico State Lessee, P. O. Box 166, Council Bluffs, Iowa, or P. O. Box 347, Santa Fe, N. M.

Business Opportunities

Warehouse Space. Oil well supply business, bonded, act Manufacturer's agent,
Knox Warehouse Company
1302 Conti Street, Houston, Texas

WANT cash backing to get and drill 100% available shallow oil-gas leases. Also, 2700 ft. gusher lease. Investigate. W. H. Haffey, 510 Wright Bldg., Okla. City, Okla.

ATTENTION MANUFACTURERS, or Manufacturers representatives — available now, a large, attractive, light and airy office with two windows in Chicago loop. Will rent with all services, including stenographic, and with or without furniture, close to all transportation. Phone or write The Oil and Gas Journal, 300 W. Adams Street, Chicago, Illinois.

I HAVE lately taken 3,200 acres oil and gas leases in Perry Township, Wood County, Ohio, where drilling is about 1200 feet, where there has been 500 barrel wells and I have three wells with oil and gas now in them. I will sell one-fourth interest in these leases for $16,000 and guarantee to drill four wells and clean out three wells and put them on the pump. Write for description prospectus. J. H. Crites, Fostoria, Ohio.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Situations Wanted

PRODUCTION SUPT. Age 44—18 years with two major companies in Mid-Continent fields. I can reduce your operating expense and can take full charge of your production and development. Employed at present and can give the best of references including present employer. Address Box J-781, The Oil and Gas Journal, Tulsa, Oklahoma.

CONNECTIONS WANTED
SALES MANAGER, Salesman Executive, wants connect parties with good or semi-proven acreage, to offer small and moderate investors on Lease, Drill, Sell and Exploit Campaign Policy, enabling investors establish themselves in legitimate oil operation of their own. If you have Deal, I may be your man, being a Live-Wire, Square-Shooter, with Ideas, Initiative, and long oil-selling record. Let's get together. Address: Connections. Box J-790, The Oil and Gas Journal, Tulsa, Okla.

ACCOUNTANT and Tax man holding C.P.A. degree, desires position, preferably with oil company in Tulsa. Now engaged in public practice. 20 yrs. experience. Reliable refs. furnished. Address Box J-791, The Oil and Gas Journal, Tulsa, Okla.

JOB as Royalty Gauger, 18 years' experience pipe line gauger, references. Address Box J-810, The Oil and Gas Journal, Tulsa, Oklahoma.

PETROLEUM TECHNOLOGIST
Chemical Engineer
Proven Producer of results. OUTSTANDING experience in design and operation of refining equipment. Suitable for an executive place in major refining or oil producing unit. Address Box J-620, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

WE BUY names royalty owners receiving pipe line checks, also stockholders. Box 2603, Tulsa, Oklahoma.

RELIABLE experienced Magnetometer operator, preferably with own instrument, about three months' work in New Mexico, beginning around Feb. 1st. Must have responsible references. State fees. Address P. O. Box 863, Roswell, New Mexico.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

R. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only.
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

ROYALTIES PURCHASING TRUST, LTD., Moorgate Hall, Moorgate London E. C. 2., England, are buyers of producing oil royalties.

Mailing Lists

ROYALTY Lists. Unit Owners Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Equipment Wanted

WANTED — Skid Type Swabbing machine. State size, price, condition, also if complete with tools, etc. Valley Steel Products Co., St. Louis, Mo.

WANTED: To buy or rent up-to-date Magnetometer in A-1 condition. Must be Bargain. Box 724, Austin, Texas.

WANTED—Oil refinery, 500 to 1000 Barrels capacity. Must be complete and in good condition. Give specifications of equipment, location, and price knocked down and loaded or as is. Address Box J-800, The Oil and Gas Journal, Tulsa, Okla.

WANTED: 2500 feet of lightweight 3" or 2½" full hole drill pipe. Also used 6"x12" or 7"x10" late model power pump.
C. N. ADKISSON, JR.
W. T. Waggoner Bldg.
Fort Worth, Texas.

WANTED—Compressor, preferably with engine. Actual delivery 140,000 cu. ft. of free air per 24-hour day at 375#. State make, specifications, price and conditions. Oko Oil & Gas Co., Iola, Kansas.

Wanted to purchase for dismantling and moving to Alberta, Canada:
A Dubbs or other suitable single or two-coil cracking unit complete with pumps, instruments, etc. capable of 500 to 1,000 barrels throughput daily, or will consider buying suitable pumps, vessels or instruments separately.
Quote location, price and full particulars to
LION OILS LIMITED
Calgary, Alberta

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma